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LECTURE I.

Delivered on Nov. 2nd, 1905.

GENTLEMEN,—There is no branch of surgery which demands greater consideration from you than that to which I ask your attention, for it comprises a group of cases some of which will certainly cause you much trouble and anxiety in future life. It is of the greatest importance, therefore, that you should have a good working knowledge of this subject from the clinical standpoint. The only way to obtain this is by taking advantage of your opportunities now whilst you are at the hospital. Obtain permission to examine every abdominal case that comes under your observation, if it is possible to do so without injury to the patient. Do not be satisfied with the statement of others that such and such a sign is present; examine for yourselves and endeavour to appreciate it on your own account. Having examined to the best of your ability, try to come to a decision as to the meaning of the signs before you and do not fail to be present at the operation, if any, so as to confirm or disprove the diagnosis. At one time all we could do was to follow these acute abdominal cases to the post-mortem room, for they almost invariably went there, but with increased knowledge of the various conditions on which the acute abdomen depends, a better estimation of the value of local signs and symptoms, and a satisfactory operative technique, we now save many who in comparatively recent years would have been condemned to death from the manifestation of the first symptom. Upon your early recognition of the importance of symptoms many a life may depend, for whilst our medical papers show wonderful instances of recovery from advanced and apparently hopeless states of disease, which give encouragement to us even in desperate cases, they do not show the numerous others which have not responded to treatment equally skilful.

On thinking over the question of the subject for a clinical lecture the other day it seemed to me that it would be an advantage to recall some of the more important cases of acute abdominal disease which have been in the hospital under my charge during the past few months, especially choosing those in which operation revealed a definite lesion which could be regarded as the cause of the condition, the treatment of which led to the saving of the life of the individual. In the early stage of acute invasion of the peritoneum, or a serious lesion of it, there will be the signs of "peritonism"—that is, the patient will suffer from shock, local pain, and vomiting; there is then an interval of varying duration when the powers of the individual are being fully employed in rallying from the shock, combating the invasion, and limiting its spread. Probably a peritonitis will immediately commence and other symptoms be superadded as the inflammation extends and the toxins produced by the invading hordes of bacteria become to a certain extent absorbed.

An abstract from "Diseases of the Vermiform Appendix and their Surgical Complications"[1] may be made to give you an idea—a general idea—of what the "acute abdomen" is like when the earlier symptoms have been misunderstood: "The general symptoms are those of a person who is really ill, unless these are hidden by the injudicious administration of morphia. The face is almost always anxious-looking. The pulse is increased in rapidity, the respirations are slightly more frequent than normal, and shallower, the respiratory movements being chiefly costal. The abdomen, to which the attention is mainly called, is distended, more or less motionless, tender on palpation, sometimes also on percussion, and often presents the signs of free fluid, such as dulness in the flanks, which shifts on movement. Vomiting is almost invariably present, and after that of the onset may pass off a little, only to become distressing later. The tongue is usually furred and the breath often foul. The bowels are almost invariably without action both to fæces and flatus. In many cases the onset of the attack is accompanied by a diarrhœa, often offensive; or a looseness of the bowels may be a late symptom, and is then called 'septic diarrhœa.' But there is always some difficulty in the passage of the contents of the alimentary canal caused by a growth, volvulus, band, segment or segments of paralysed gut, &c. A rectal examination should always be made, although in the majority of cases it yields a negative result. The urine is usually scanty; at first normal, later it may contain albumin, but rarely blood." This description may appear inadequate and it is necessarily so; there are hardly any two cases that are alike in the cause of the sudden illness and in the resistance of the individual. So that in one patient the general symptoms are of the greatest importance and must be relied upon as an indication for treatment, whilst in another the local signs indicate the dangerous nature of the illness.

You will naturally ask what are the signs and symptoms to be specially noted in any case coming under notice with this history of sudden abdominal pain, shock, and vomiting? I take it that what is really required is to give such indications as may be useful in showing you when the state of the patient is one which requires operation to point out the symptoms which cannot be neglected with any consideration for the patient's welfare. These I will give briefly.

In the first place, look with attention at the patient's face, for you will learn much from it. The colour in a case of acute abdominal disease will vary very much from that of a healthy person to the dusky flush of one whose respiration is embarrassed; the expression, from a placid indifference, to that of a man in mortal agony. Sunken eyes with dark circles round them, a pinched face, and an anxious expression are very ominous; if the nostrils are working rapidly you may be sure that the pulse is also going too fast and there is very serious disease present.

The pulse-rate is a very important indication as to whether the case may be safely left, it is advisable to operate, or the patient is too far gone for relief. If some hours have elapsed since the commencement of the attack and the pulse-rate is much too high there is nothing to be gained by postponing an operation; every hour lost renders a successful operation less probable. Any abdominal case with a pulse-rate of over 100 should be carefully watched; if it continues to rise beyond this the patient will probably require surgical aid, although other symptoms may be improving. The temperament must be considered in estimating the value of the pulse-rate, for occasionally a patient may be unduly excited by the medical man's visit or suffering from a neurosis.

The temperature is often misleading; there may be the most widely diffused septic suppuration with a normal or subnormal temperature. Usually there is a rise at first, but it should begin to fall on the second day. A low or subnormal temperature and a rapid pulse is a very bad combination.

Vomiting should cease after the onset and its continuance is a bad sign. The effortless pumping up of large quantities of greenish fluid should cause much concern.

Restlessness is an unfavourable symptom; so, indeed, is a condition of manifest indifference and apathy. Usually you will find your patient lying on the back with the arms thrown above the head and the lower limbs flexed on the abdomen. This attitude is not, however, universal.

Look for the marks of recent applications for relief of pain; these will give you some idea of its severity. Examine the skin for signs of inflammation and œdema and when the abdomen is fully exposed note the amount of movement on respiration as naturally performed, and then ascertain how much the patient can voluntarily increase this. Find out the exact seat and character of the pain by asking the usual questions; also the history of previous attacks of a similar kind. Gently palpate so as to learn the condition of the muscles as regards rigidity, general or local, also the presence of any local tumour or undue resistance. Percuss the abdomen throughout, but with a light hand, paying great attention to the flanks and to the parts above the pubes. If there is any dull area try if it is affected by

[1] Battle and Corner, p. 136.

moving the patient, as the presence of free fluid is a sign of importance. Define the liver dulness. Observe also the extent of distension of the intestines, the presence, or otherwise, of peristalsis, and whether this is local or general. If there appears to be some distension of the bowel find out if this is increasing in amount.

It is hardly necessary to remind you of the necessity of learning from the friends, the state of the bowels, if there is inaction or diarrhœa. But you should nearly in all cases make a rectal examination at once and in most this has to be repeated. You thus ascertain from the beginning if the contents of the pelvis are normal or not. In some instances you will find inflammatory swelling on the right side and in others an abnormal amount of tenderness. The extent of these will, of course, vary much with the nature of the case and the duration of the illness.

The number of cases of acute abdominal disease which are secondary to disease of the appendix naturally make us, in the first instance, consider the subject from the point of view of that part of the digestive tract. The relative proportions of the various factors in the causation of acute abdominal diseases are shown in the statistics of the cases under care in St. Thomas's Hospital during the three years 1900, 1901, and 1902.[2] In all there were 456 cases, of which 168, or 37 per cent., were from disease of the appendix, forming by far the largest class.

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The great importance of the rôle which the appendix plays is clearly shown by this table. The first four of the groups in the list are the most important and require special attention. They are worth consideration in the first place from the question of age, for given certain difficulties in diagnosis the probabilities will be in favour of intussusception during the first ten years of life, acute disease of the appendix between the ages of 15 and 30, perforations of the alimentary tract from 15 to 40, and intestinal obstruction from the age of 30 upwards, with increasing frequency to a maximum between 50 and 60.

The simple uncomplicated cases of inflammation of the appendix, and those which are ending in localised abscess, a far more common occurrence than is generally taught, are not under consideration to-day. My remarks are chiefly concerned with the cases in which the inflammation of the surrounding peritoneum is not only a septic one, but one which tends to diffusion, and ends fatally if unrecognised or wrongly treated. A discussion of all of the combinations of symptoms and signs which may be met with in cases where diffuse peritonitis is coming on is beyond the purpose of this occasion. I desire now to illustrate by the description of cases some of the more common. When the illness is ushered in with a rigor, severe vomiting, very acute pain, or other startling symptoms, the friends as well as the medical attendant are alarmed and on the alert, but when the onset is rather indefinite and the patient does not appear very much worse from one hour to the other there is a danger that surgical assistance may be asked for when it is too late to do any good. I have seen this very often in cases of gangrene and perforation of the appendix when the extent and nature of the mischief were quite unsuspected.

The case of a boy, aged six and a half years, is a very good example of the type of which I am speaking. He was admitted to the Leopold Ward on March 30th, 1905, and left on May 20th. He first began to be unwell on March 27th, about midday, and was sick on the 28th and 29th. He had some abdominal pain and constipation but not very much pain. He was thought to have some stomach derangement and was given castor oil. Mr. E. T. Whitehead, who saw him on the morning of admission, thought seriously of his state and agreed with me when we saw the boy together about 12 o'clock that he had diffuse peritonitis secondary to disease of the appendix. The state of the boy at that time was as follows. He was a pale lad with light hair, lying in his bed partly turned to the right, and apparently quite comfortable. He did not look very ill, smiled when spoken to, and answered questions about his name, age, &c., quite readily. He drew a deep breath when requested to do so and said that his chest did not hurt him; he admitted that he had had some pain in the stomach. When requested to turn in his bed fully he did so easily and with a smile. The abdomen was somewhat distended, not rigid, but with greater resistance in the right iliac fossa than in other parts. In the right flank running obliquely into the pelvis across the iliac fossa was a well-marked area of dulness, evidently, from its shifting character, due to fluid. His tongue was moist and clean; he had vomited the night before but not that morning. The bowels were confined. He had slept without morphine. The temperature was 99° F. but his pulse was 140. At the operation at 3 P.M. we found very offensive pus in the right flank and pelvis, quite unlimited by adhesions, and lymph on some of the coils of intestine in the iliac fossa and pelvis. The appendix was large, its walls were œdematous, there was a circular band of gangrene running round it about three quarters of an inch from its distal end, and in the mesenteric border of this part there was a perforation. On opening the appendix there was a concretion above and another below the gangrenous part. The subsequent history was briefly as follows. The bowels acted on the 31st after a turpentine enema and improvement followed in the condition of the abdomen, but he suffered from vomiting. Until April 2nd he was very ill, losing flesh and strength, with occasional vomiting of coffee-ground material. His pulse had come down to 100 and his temperature was 98°, but he seemed to have no "rally." On the 3rd this brown, offensive vomiting ceased at 3 A.M. Later in the day five grains of calomel were given with good result and he began to improve. Making steady progress from this time he was no longer a source of anxiety to us.

This case has been given because the symptoms were not those typical of the acute abdomen; the onset was insidious, but I think it is a very important and excessively dangerous type. Operation was only just in time, and I feel confident that if it had not been for the skill and devoted attention of the sister of the ward he would have slipped through our hands, for his state was very serious for some days afterwards. In these cases a slow absorption of toxin takes place by the lymphatics of the peritoneum, and it may be only when renewed vomiting is added to the rapid pulse that the gravity of the case is appreciated. How often do we hear it said, "but I never suspected it; he had so little pain and seemed so well."

A more typical example of acute abdominal disease secondary to appendix mischief is the following. A schoolboy, aged 11 years, was admitted to St. Thomas's Hospital, under the care of Dr. Hector Mackenzie, on Jan. 25th, 1905. His illness began four days before (on the 21st) during the night with acute pain in the right side of the abdomen; on the following day he was much worse. He also felt sick and vomited everything he took. His bowels were constipated and remained so until admission. The vomiting and pain in the abdomen continued. On admission he had a pinched, anxious-looking face and complained of pain in the abdomen, chiefly in the lower part on the right side. He was lying on his back with his legs drawn up. The abdomen did not move at all in the lower part and there was only a slight movement in the epigastrium and upper part. On palpation great tenderness was found all over the lower part, especially in the right iliac fossa. The abdominal muscles were rigid and a swelling was detected in the right iliac fossa, extending upwards from Poupart's ligament. This swelling could not be defined accurately owing to the muscular rigidity. On percussion dulness was present over this swelling and also in the left flank. The rest of the abdomen was resonant. The pulse was 100, the respirations were 20, and the temperature was 100·6° F. In contrast with the case of the other boy, who was quite non-resistant to his disease and indifferent to his surroundings, this patient was restless and protested vigorously against operation. At the operation free pus in considerable quantity was found in the peritoneum. There was much deposit of lymph on the peritoneum covering the small gut, which was generally reddened; in some places hæmorrhagic patches could be seen under this lymph. The purulent fluid filled the pelvis and extended into the right flank. The appendix was three inches long, thick, and fleshy, with gangrenous mucosa. There was a concretion in the central part and just below it a minute perforation externally plastered with fibrinous lymph. The peritoneal cavity was

[2] Loc. cit., p. 135.

washed out with warm saline solution; some of the lymph was gently removed with gauze sponges; a drainage-tube was inserted and also a gauze plug. After the operation the patient's sickness ceased; his pulse gradually fell to normal but was still 108 on Feb. 8th, 14 days after operation. At first he was peevish and difficult to please but left the hospital quite well on March 17th.

You will perhaps be called upon to give your opinion in a case in which, for a time, there has been a very evident improvement and the friends of the patient naturally want to know if the dangerous stage is not passed and safe convalescence assured. "He is so much better!" Here you must be guided by various considerations. At the hour when I should have been addressing you on this subject a month ago I was engaged in operating on a most instructive case, a brief note of which is here given.

On Oct. 2nd the patient, a previously healthy girl, aged 19 years, was slightly troubled with diarrhœa, the cause of which was not known. On the morning of the 3rd she was awakened the first thing by severe pain in the lower abdomen. She vomited throughout the day, being unable to retain any nourishment. The bowels did not act. She was kept in bed. On the 4th there was a severe attack of vomiting and diarrhœa at 3 A.M. and the pain persisted. When she was first seen the abdominal movements were very slight. There was general tenderness, especially in the epigastric and right iliac regions, but the abdomen was not very rigid. The tongue was coated and rather dry. The pulse was 136 and the temperature was 100° F. At 9 A.M. on the 5th the tenderness was rather more marked in the right iliac region than elsewhere. The abdomen was more distended and harder to the touch. Per rectum the chief tenderness was to the right; there was no tumour. Vomiting had ceased at 3 A.M. The pulse was 120 and the temperature was 99·6°. About 12.30 P.M. she was flushed and looked rather tired but was quite cheerful and clear headed. The tongue was furred; it had been dry. No morphine had been given. The abdomen was slightly distended, generally tender, not moving well, and the patient was unable to draw a deep breath. There was tenderness, especially in the right iliac fossa; the right rectus muscle in its lower part was somewhat fixed. On percussion there was dulness in the right flank and more resistance than elsewhere, but no definite swelling. Otherwise the abdomen was normal. The pulse was 140.

An operation was performed as soon as possible. Free purulent fluid was found on opening the peritoneal cavity and thick pus filled the pelvis; this was very offensive. The appendix was turned upwards and to the left and was adherent to the under aspect of the umbilical region. It measured about three and a half inches in length, was fleshy and contained a large concretion; below this was a patch of gangrene and in the mesenteric border of this patch there was a perforation. The pelvis was carefully cleaned with dry aseptic gauze. Some pus was removed from both flanks. The coils of intestine in the pelvis were covered with thick lymph which adhered closely and it was only sponged away where it was lightly adherent. A gauze plug was inserted and the pelvis was drained. On the 8th the patient was doing extremely well. The pulse was 60. There was no pain. The temperature was normal. The bowels acted after calomel. The abdomen moved satisfactorily and was no longer tender. The plug was removed and the glass tube was replaced by a rubber one. She has made a good recovery.

The reason why no one was consulted at the commencement of the illness was that as the patient always suffered much at the commencement of the period, and this was due on Oct. 3rd, her pain was put down to that. The period came on at the proper time but without relief of the pain. It was then recognised that the period was not responsible and that the patient had some severe illness. Here it was the rising pulse on the fourth day of illness more than anything else that induced us to urge operation on the relatives, for beyond this there was no unfavourable sign. Had there been a definite swelling in the iliac fossa or pelvis perhaps one would have felt less certainly of the need for immediate operation, for it would have been probable that some attempt at localisation was taking place. All the other symptoms were quite satisfactory.

In yet another case, also seen in consultation away from the hospital, after a definite attack of severe pain, the patient was apparently quite recovered from the peritonism and felt perfectly well. Here the verdict in favour of operation was given because of the excessive rigidity of the lower part of the right rectus which a dose of morphine had not in any way diminished. The patient, a man, aged 32 years, was seen with Dr. G. G. Davidson about 10 o'clock in the morning of March 15th, 1905. He had complained of some stomach ache on the previous evening and vomited after a dose of castor oil. He then sent for Dr. Davidson who, knowing that he had had a mild attack of appendicitis two years previously, examined him very carefully. The man had a normal temperature and natural pulse-beat and the only thing unusual was tenderness above Poupart's ligament on the right side. The pain was not very severe, so no medicine was given to make him sleep, but he went to bed earlier than usual and slept until 4 A.M. on the 11th, when he was awakened by a severe pain in the abdomen. He again sent for Dr. Davidson who found him suffering severely and gave morphine to relieve the pain. The pulse was then 70 and the temperature was normal. At 10 o'clock, when we met, the patient had been sleeping and the pain was completely gone. His expression was good. The pulse was 80, the respirations were 20, and the temperature was 98·6° F. The tongue was thickly coated but moist; the bowels were confined. The abdomen was rather rigid generally but not distended. Tenderness was complained of on pressure in the right iliac region but the lower part of the right rectus was so very hard and rigid that nothing could be felt in the iliac fossa. The percussion note in this region was impaired but it was difficult to define any dull area.

Immediate operation was advised and performed. There were some ounces of pus diffused in the iliac fossa and pelvis, with peritonitis affecting the coils of small intestine in the area exposed, some of which were covered with lymph. The appendix was large, measuring five and a half inches in length and about one and a half inches in its greatest transverse diameter. It was much distended and discoloured, being gangrenous in places. There was a stricture of the proximal end and beyond that was the distended portion; the gangrenous wall had given way in two places—one of these openings was partially blocked by a stercolith. Three other stercoliths were present and the whole of the mucous lining was gangrenous. The appendix was difficult to bring to the surface and could not be lifted until its attachments had been divided. The peritoneum was very sensitive; during the operation pulling on a coil of small intestine or sponging the peritoneum caused at once a change in respiration, and it may be that this unusual degree of sensitiveness was accountable for the paralysis of a part of the small intestine near, which subsequently developed, causing subacute obstruction. All inflammatory symptoms ceased after the operation; the temperature remained normal, whilst the abdomen remained without distension or pain, and the bowels acted, but nothing appeared to relieve the patient of his sickness.

A second abdominal incision a week later showed the complete absence of peritonitis and disclosed a portion of small intestine about 12 inches in length near the right iliac fossa, which was flaccid, and above which the gut was distended. This was emptied through a puncture which was then closed, but the patient did not survive many hours.

In this instance, then, the patient suffered from the local effects of the acute mischief and not from the general result of the absorption of toxins. Dr. Davidson deserved success, for no one could have been more prompt in the recognition of the severity of the case or have treated it with more skill than he showed.

We are told by some surgeons that the removal of the appendix should be carried out immediately in all cases when signs of an attack of appendicitis are recognised. This may be called the counsel of perfection. The public, which has become somewhat familiar with the disease in its milder attacks during the past few years, can tell you of so many friends who have recovered without operation that the suggestion is scouted as soon as made. You cannot with a good conscience say that the attack will not in all probability pass over without risk of life in the majority of those treated by you. What I do think is that your duty as a medical adviser renders it imperative that you should be so skilled in the recognition of the various aspects of the disease that you should be able to say without doubt when immediate operation is imperative, not only when it is advisable. There are quite sufficient proofs in the hands of the profession that such excellence can be attained. My advice to you is to endeavour to reach it. So many of these acute cases come into hospital at night that you must be prepared for some

self-sacrifice if you wish to gain all the good you can from your hospital opportunities.

There is another thing that should be remembered and it is not only the need for operation in these serious cases but for early operation. A few hours may make all the difference between a life saved and a life lost. Do not behave with over-anxious fussiness that shows your alarm to the friends, if you conceal it from the patient himself, but see that sufficiently frequent visits enable you to observe the earliest signs of any unfavourable change. There are undoubted recoveries on record from an acute septic general peritonitis, but they are not so numerous as published cases would have us believe. There is a difference between "diffused" and "general" which is, I am afraid, not always appreciated by those who write and talk of their own cases.

In the remarks that I have made to-day I have only mentioned a few cases which have been under my personal observation; as you know, there have been some which have been treated by other surgeons in the same wards with equal success. They may have been as instructive as their treatment was successful but they cannot be quoted here as I did not see them. I have not mentioned cases of peritonitis which presented no prospect of recovery from the time of admission (the too late type); they would not do more than emphasise what I have endeavoured to impress upon you—the importance of the early recognition of symptoms, and promptitude in acting upon them in the conditions on which the "acute abdomen" when due to a diseased appendix depends.

In the consideration of the acute abdomen and its relationship to disease of the appendix there is another way in which a most serious condition may arise and that is through the bursting of an appendix abscess into the peritoneal cavity. This is a most formidable complication to control and until a few months ago it was in my experience invariably a fatal one. As you are aware, in cases of appendix suppuration there is an attempt made by nature to localise the pus; occasionally for some reason this is only successful for a time and there is a further spread of the pus and involvement of more of the peritoneum. This appears to take place slowly and is not accompanied by the definite signs which we have spoken of as peritonism. A very different clinical picture is presented by the patient in whom an abscess containing a large amount of pus has suddenly burst, distributing its septic contents throughout the abdomen.

Examples of this complication of appendix abscess have been under treatment during the past few months; they are very instructive and give hope for the future. Altogether four such cases have been under care since July, 1904. They are as follows:—

CASE 1.—In this case, that of a boy, aged 16 years, the abscess ruptured whilst he was lying, preparatory to operation, in the male medical ward. There was great shock and at the operation there was a quantity of purulent fluid generally diffused. The operation was not successful in saving life and the patient died in a few hours from general peritonitis.

CASE 2.—The patient, aged 19 years, a ward maid at a fever hospital, was admitted under the care of Dr. Mackenzie on Nov. 3rd, 1904. Her illness commenced with pain in the right iliac region seven days before admission; she was obliged to go to bed, but resumed work on the following day, and did her usual duty as well as she could until 15 hours before she came in, when a sudden acute pain attacked her and she was again obliged to go to bed. There had been diarrhœa for two or three days. When seen with Dr. Mackenzie she was propped up in bed; her nostrils were working rapidly and she was breathing with some difficulty; her face was dusky and anxious-looking. She was somewhat restless but quite clear in her mind and able to answer questions. Her respirations were 32, her pulse was 100, and her temperature was 100·6° F. The lower abdomen was distended and did not move at all on respiration; the upper half moved moderately. On palpation there was a marked resistance in the lower half of the abdomen, especially over the right iliac fossa, where there was a definite swelling. There was great tenderness here but the abdomen was generally tender. On percussion dulness was found in both flanks but not above the pubes. The liver dulness was obliterated. The respiration was thoracic and shallow; the tongue was furred and dirty.

Two incisions were made, one through the right rectus and the other in the left linea semilunaris. The abscess was found to have given way on the pelvic aspect and the pelvis was filled with offensive semi-purulent fluid which was generally diffused throughout the lower part of the abdominal cavity. Lavage with warm saline solution was carried out and drainage through both openings. The patient made a good recovery and left hospital on Dec. 15th. The appendix was excised on Jan. 18th, 1905. It was two inches long. A stricture was situated half an inch from the tip, below which had been a small perforation; it was adherent to the cæcum. The omentum was adherent to the old cicatrix, otherwise there was nothing unusual.

CASE 3.—The patient, a man, aged 33 years, was sent to the hospital by Mr. S. R. Hallam and was admitted under the care of Dr. Mackenzie on Nov. 4th, 1904. He had had an attack of pain in the abdomen on Oct. 31st, chiefly on the right side, but did not give up his work. During the night of Nov. 3rd an attack of intense pain was experienced and he came to the hospital in the morning 16 hours later. When examined he was found to be perspiring freely; his face was pale and anxious looking and his respirations were shallow and diaphragmatic. An attempt to breathe deeply caused him much pain in the abdomen. His pulse was 104 and his temperature was 101·2° F. There was no vomiting. The bowels were confined. The abdomen did not move on respiration and was very tender on examination, especially in the right iliac region and in the loins. There was dulness in the flanks and the liver dulness was obscured. The abdominal muscles were rigid, this rigidity being most marked on the right side. In the right iliac fossa there was an ill-defined swelling. At the operation two incisions were made, one through the right rectus muscle and the other through the middle line below the umbilicus. Offensive, semi-purulent fluid was generally diffused throughout the peritoneum. The intestines looked very congested and œdematous. The abscess had ruptured to the outer side. Lavage with saline fluid of a temperature of 110° was thoroughly performed, the hepatic and splenic regions being carefully irrigated. Drainage was employed from both wounds. These were closed by Dec. 17th. On Jan. 4th, 1905, the appendix was removed. It was one and a half inches long and contained two strictures, proximal and distal; the lumen at the extremity was obliterated. There were evidences of a former perforation below the distal stricture. The appendix was coiled up beneath the cæcum in a mass of adhesions.

CASE 4.—The patient, a married woman, aged 34 years, was sent to the hospital by Mr. C. Dwight Morris of Feltham on March 22nd, 1905. On March 15th she began to feel ill with pain all over the abdomen. The day before admission the pain became suddenly much worse and she vomited a good deal, but it was not until the day of admission that it became localised to the right iliac fossa. The vomiting continued. There had been no previous attack of severe pain in the abdomen but she had suffered at times from indigestion and wind. The face was flushed and appeared somewhat anxious and drawn. The abdomen was distended in the lower part, especially in the right lower quarter. The distension was not great, but movement on respiration was very poor in the lower half. The abdominal wall was unusually flaccid and a swelling was detected in the right iliac fossa extending upwards from the outer half of Poupart's ligament. There was a good deal of tenderness on pressure over this swelling; the rest of the abdomen was also tender but only to deep pressure. Around and below the umbilicus coils of intestine were seen with occasional peristalsis. On percussion dulness was detected in both flanks and in the iliac fossa. The liver dulness was normal, the temperature was 101·6° F., and the pulse was 124. At 8 P.M. the abdomen was opened through the right rectus muscle. A small quantity of purulent fluid welled out and a large collection was found in the pelvis; flakes of lymph were found in various places adherent to the intestines which were red and inflamed. The thickening in the iliac fossa was composed of coils of small intestine which had limited an abscess cavity, the pus from which had mostly escaped through an irregular opening to the outer side. Below this opening, extending outwards and upwards, was the appendix, the separation and removal of which were readily effected. It was much swollen and presented a perforation about the middle of its length, the result of gangrenous ulceration. Two small concretions were found free outside the appendix, which was not strictured. The peritoneal cavity was thoroughly washed out with sterilised saline solution (110°). A glass tube was passed into the

pelvis and a gauze drain was placed above the opening into the iliac abscess cavity. A few fish-gut sutures were then employed to bring the edges of the wound together. In the evening the pulse was 100, the temperature was 99·2°, and the respirations were 24. The gauze drain was removed on the fourth day, the glass tube was replaced by a rubber one on the seventh, and this was replaced by a gauze strip on the fourteenth. The wound slowly closed and the patient was able to get up on May 9th, leaving hospital on the 15th. She had no pain after the operation but her temperature, although never high, did not become normal for the whole 24 hours until April 2nd.

A Lecture

ON

THE INSTITUTION AND SANATORIUM TREATMENT OF PULMONARY TUBERCULOSIS IN RELATION TO LARGE CENTRES OF POPULATION.

Delivered at the Mount Vernon Hospital Post-Graduate Course on Jan. 18th, 1906,

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GENTLEMEN,—The death-rate in the city of Leeds, which has a population of over 450,000, was 15·3 per 1000 during 1905. Of these deaths no fewer than 1·23 per 1000 were due to pulmonary tuberculosis, for 558 individuals succumbed to this disease. During this time there must have been at least three or four times that number—viz., from 1660 to 2200—of individuals actually suffering from pulmonary tuberculosis in Leeds. Dr. J. Spottiswoode Cameron who has kindly furnished the above figures also tells me that the death-rate from this disease has diminished during the past three quinquennial periods—from 1·50 in 1891-95, 1·45 in 1896-1900, to 1·32 in 1901-95. This number of consumptives is undoubtedly largely recruited from the poorer classes in the community. It is this class of phthisical patient about which I propose to speak to-day, and what I shall have to say will be largely based upon an experience obtained by an intimate connexion with the Leeds Tuberculosis Association since the time of its foundation in 1899. This association has now 70 beds at its disposal, 34 of which are used for early cases at the Gateforth Sanatorium and 36 for advanced cases at Armley Hospital. It is only too obvious that these small numbers are totally inadequate for the purpose and we look forward to further extensions. The scheme has, however, furnished us with some useful experience and it enables one to get an idea of what is really required if we are to grapple effectively with the morbidity and mortality caused amongst us by pulmonary tuberculosis.

By institution treatment I understand the treatment of this disease in institutions specially set aside for the purpose. We all know how unsatisfactory is the out-patient treatment of the disease in large general hospitals; at any rate, an 11 years' experience of it has brought this fact sufficiently home to me. It consists of the routine treatment of the appetite and of digestive disturbances, the provision of substitutes for food which many are unable to obtain at their own homes, the sedative treatment of cough, &c. The course of the cases is a chequered one but the tendency is nearly always in a downward direction and eventually they drop out. If one is able to follow them up, as in a public dispensary practice, one generally finds that they have died and not a few unexpectedly—that is, somewhat early in the disease.

Any scheme which adequately deals with the prevention and treatment of pulmonary tuberculosis in our large centres of population should include (1) an institution or sanatorium for the earliest cases; (2) an institution or home of rest for advanced cases; (3) a hospital for cases intermediate between these two classes; and (4) a city office, including an out-patient department. In the Leeds scheme we have three out of these four essentials, but our out-patient department does not yet include the treatment of our patients but only the examination and observation of them. We have no hospital in the sense which I shall explain later and everything we have is much too small for its purpose.

1. *The sanatorium for the earliest cases.*—This brings me at once to the question of the value of sanatorium treatment for the poorer members of the community. At the present time no one would, I take it, contend that the sanatorium treatment of pulmonary tuberculosis is an ideal one. Among its disadvantages may be mentioned that the treatment must be prolonged, that it is expensive, and that it almost necessitates an enforced idleness which may be, and often is, demoralising. Permanent recovery can only be expected in the earliest cases taken from the phthisical poor of our large communities. This does not mean that nearly all cases, early or otherwise, will not receive obvious and great benefit from the open-air treatment—quite as great benefit as is derived from the hospital treatment of many chronic diseases, but they are not, and cannot be, looked upon as cured or, to speak more euphemistically, they will relapse when they return to insanitary homes where the necessaries of life are far from plentiful. The discharged patient may be fit for work, but the competition in the labour market is keen and the delicate (including the phthisical) cannot compete with the sound. This we have seen over and over again even in cases where the prolonged idleness has not had the effect of making an individual disinclined to work. These facts make it all the more necessary to select the *earliest* cases from among those who apply to us for sanatorium treatment if we are to make the best use of our small sanatorium.

Selection of patients for sanatorium treatment.—My practice is to divide these patients into the febrile and non-febrile and the latter into four groups, according to the extent of the disease. Thus a patient who has a temperature verging on or above 101° F. would not be admitted even though the physical signs were slight. We make some provision, as will be mentioned later, for a few febrile cases in our other institution and if the temperature subsides they may be transferred to the sanatorium later. The non-febrile cases are further divided into bilateral and unilateral. This division is based on physical signs and obviously may not be really correct, as the existence of a lesion no doubt precedes the physical signs, but it forms a useful basis of classification. The non-febrile and unilateral cases are further subdivided into three groups.

Group I.—Cases in which the physical signs are slight and limited to the extreme apex. A thorough examination of all parts of the chest is made as not only the presence of the disease must be ascertained but also its extent. Diminished and delayed movement, an impaired percussion note (especially over the clavicle and inner part of the first interspace), an alteration of the breath sounds in the direction of bronchial breathing (broncho-vesicular and vesiculo-bronchial breathing), and weakening of the breath sounds are carefully looked for. I am led to attach much importance to this weakening of the breath sounds. It is often very well marked in the downward extension of the disease towards the base of the lung, and frequently with increased vocal vibrations. I have very clear recollection of a boy repeatedly examined who had this weak breathing at the left base and no other physical signs. I thought that there might be something pressing on the left bronchus—possibly tuberculous glands—as there were enlarged glands in the neck. In a few months' time the whole broke down into râles and the case was clearly one of basic phthisis. The inspiration may be roughened, suggesting its early breaking down into râles. We need to diagnose the disease early, even if possible in a pre-râle stage. As regards stethoscopes my own preference is for the phonendoscope. Sometimes I make use of two instruments, each one specially connected up with a rubber tube and ear-piece. This is a cumbersome arrangement, but it appears at times to furnish additional information in comparing the physical signs on the two sides or in examining an apex simultaneously from the front and the back. In Group I. I also include cases where there are no definite signs but where there is other evidence making the presence of pulmonary tuberculosis certain, or almost

so, such, for instance, as the occurrence of hæmoptysis in a young subject without other obvious causation, or the presence of cough with wasting and dyspepsia in one who has been in contact with the disease. The presence of tubercle bacilli in the sputum is, of course, positive proof and just occasionally in the earliest cases one obtains valuable assistance from this examination, but if tubercle bacilli are present constantly, and especially in numbers, it always occurs to me that the indefinite physical signs may be due to the existence of a disseminated and perhaps extensive lesion. I may say here that I have not found any advantages in the sedimentation method of examining the sputum over the method in which bits of the sputum are carefully selected with the help of a pointed platinum spatula. Some time ago I examined various sputa by both methods, at the same time employing the inoculation method. In the absence of tubercle bacilli a patient with indefinite physical signs may be admitted in whom on further examination the presence of the disease still remains doubtful. Such a patient should be tested with tuberculin. My patients are always kept in bed during the first week of the treatment so that a careful record may be made of their condition, especially of the temperature, pulse, respiration, &c. The tuberculin test can be applied at the end of this week's observation. If the result is negative the patient should be discharged.

Group II.—This includes cases in which the signs at the apex are more marked and more extensive but the disease is still limited in character.

Group III.—This includes the cases in which the signs are not only marked at the apex but there is also evidence of extension of the disease downwards towards the base of the lung in the manner already indicated.

The cases belonging to Group I. are specially suited for sanatorium treatment. These cases, it would be thought, should easily be found in large centres of population but sometimes there is difficulty. Cases belonging to Group II. may also be taken but those of Group III. should be excluded. My experience of this last class of case has always eventually turned out to be unsatisfactory, however much they may have improved in the sanatorium. In selecting the earliest cases for sanatorium treatment there are one or two other points to be remembered. An attempt is made to estimate the resistance of the patient, chiefly by his appearance, physique, by the relation of symptoms to signs, and possibly the presence of a bad family history. The presence of tuberculosis elsewhere in the body is unfavourable, and especially laryngeal tuberculosis. I am inclined to look unfavourably upon cases with obstinate laryngeal catarrh even where one cannot make out any infiltration in the cords. I have seen two cases of patients in comfortable circumstances in life in which a laryngeal infiltration has apparently healed but these are the only ones of which I can feel at all sure. I have not treated laryngeal tuberculosis radically by curetting, &c. Although I see a fair number of instances of this complication I cannot recall many which I should look upon as suitable cases for such radical treatment. The larynx should be systematically examined in all cases of pulmonary tuberculosis as a lesion may be discovered even when not suspected. Recurrent diarrhœa and albuminuria should disqualify. Enlarged glands in the neck, I am convinced, are not so rare in pulmonary tuberculosis as some would imagine. I do not make them a ground for exclusion.

I need not dwell upon the treatment adopted in the sanatorium. It consists of life in the open air as much as possible, a generous dietary, rest, and graduated exercise. Pyrexia is treated by strict rest in bed, in shelters, or on verandahs. A small minority of the cases may show no improvement and only put on very little weight. If weight is not gained within the first couple of months it does not often happen with us that it is gained later or that the patient does well. On the other hand, a considerable gain should not be the only test of the patient's progress.

I have seen certain accidents of pulmonary tuberculosis occur during the stay in the sanatorium. During the six years pneumothorax has appeared in two cases; the one rapidly proved fatal and the other after a few weeks. They were both cases which had put on two stones in weight and it was only two or three weeks before the onset of the pneumothorax that the patient began to lose ground. There has been one rapidly fatal case of hæmoptysis without previous warning. In one case quite alarming cerebral symptoms supervened—viz., headache, vomiting, and squint—so that a diagnosis of tuberculous meningitis was made but these symptoms gradually disappeared. In a couple of cases I have known laryngeal complications to supervene. Patients usually remain in the sanatorium from four to six months or even longer. They report themselves at our office afterwards so that they remain under observation. They nearly always lose a few pounds in weight after their discharge but the weight should then remain stationary.

I have not been able to get together the results in statistical form but as mentioned before I have definitely come to the conclusion that if a permanent arrest of the disease or cure is aimed at only the cases in Group I. should be taken from among the class of patients who apply to us for sanatorium treatment. The whole question of the value of sanatorium treatment among the poor classes of the community seems to me to depend almost entirely on the selection of really suitable cases for the treatment. On the other hand, it is useless so far as the remote results are concerned to take a patient who will have no visible means of livelihood after his discharge.

I have already alluded to the prolonged idleness which often accompanies sanatorium life. Dr. F. W. Burton-Fanning has occupied himself with this question and has succeeded in providing occupation even for those who are confined to bed on account of pyrexia. Here as well as in some other matters I am indebted to Dr. Burton-Fanning for some useful suggestions which I have obtained from him personally or from his excellent little book on the open-air treatment. Mat-making, basket work, &c., have been tried. As yet we have done very little in this direction, but recently we have formed a "light employment" committee which I very much hope will do something to combat the great disadvantages of idleness in our sanatorium. Of course, certain games may be allowed. A miniature golf ground or croquet may help to provide occupation, as in one of our institutions. It is, of course, a fact that patients even in the earliest stage of the disease who have made satisfactory progress in a sanatorium should not go back to an unsuitable occupation. If outdoor work could be provided for these patients for, say, a year after their discharge the ultimate results of sanatorium treatment would be improved. My colleague, Mr. H de C. Woodcock, has taken much interest in this subject. He has put before us various schemes for providing light employment for patients shortly before their discharge and also for finding work, in connexion with the sanatorium, for patients who would have otherwise had to return home. Owing to Mr. Woodcock's advocacy we are about to start a poultry farm at Gateforth. It seems to me, however, impossible for any association to charge itself with the finding of suitable work for discharged patients coming from large towns. I say this after hearing Dr. Burton-Fanning's very successful effort to deal with a similar difficulty.

Before leaving this part of the subject I should mention that the sanatorium should be well situated in the country, preferably on high ground and a porous soil, sheltered from cold winds and with a satisfactory water-supply and drainage scheme. I have personal experience of the difficulty of satisfying all these conditions but on the whole Gateforth Sanatorium, although not ideal, suits our purpose very fairly well.

2. The necessity of a second institution—viz., a home of rest—in the scheme of dealing with pulmonary tuberculosis in large communities is clearly obvious. One has only to visit in the poor quarters of a large town the home in which the doomed consumptive is eking out his days to appreciate the danger which quite unconsciously he is to those about him. Actual demonstration may not so infrequently be provided, for another member of the family may be stricken by the disease or a child develop tuberculous meningitis. The removal and isolation of not a few of such patients are absolutely necessary in the interest of the public health, quite apart from the humanitarian aspect of the question. It is unnecessary further to advocate the care of such a patient in a well-managed home or to lay stress on the relief which it brings to the family. Of course, some of these patients find their way into the Union Infirmary but not a few decline to be removed there. Very few patients refuse admission to an institution such as ours and even if, as very exceptionally happens, they desire to be discharged later, we have accomplished something towards teaching them to avoid being a source of danger to others. Such an institution should be so arranged that with the help of shelters and verandahs it can

be kept practically empty of patients during the day. In this way the risks of infection, reinfection, and secondary infection are reduced to a minimum. The patients, with some exceptions to be mentioned later, are in the advanced stage of the disease or the subject of some serious complication such as laryngeal tuberculosis. Indeed, the advanced stage of the disease and poverty should together be the chief claims of the patient for admission into the home.

The improvement which even the advanced case will often undergo is quite remarkable; I have seen patients with physical signs of disease over the whole of one side and a considerable part of the other put on nearly two stones in weight. The diet is a generous one, better than that of a general hospital, but not quite so good as that of a sanatorium. Last year the average cost of the patients per head per day was 3*s.* 4*d.*, as against 3*s.* 7½*d.* at Gateforth, the office expenses being 3½*d.* The relief of symptoms which these patients (accommodated as they often are on verandahs) experience even towards the end of life, is striking. The occurrence of night sweats is quite exceptional with us and then they only occur on isolated occasions. I never need to use drugs for them. The dyspeptic symptoms are often relieved. Diarrhœa is not common with us. It is treated in the usual way and particularly with copper sulphate and opium. The cough may abate but it mostly requires treatment at night. When morphine does not satisfactorily control it, syrup of codeine or a linctus containing heroin is used. Severe hæmoptysis has not been as common as one might have expected, considering the class of case admitted. I have thought that nitrite of amyl has been of service in its treatment. I have used chloride of calcium in some cases of recurrent and persistent hæmoptysis but its usefulness was open to doubt. Not a few of these advanced cases have very little pyrexia. When this exists rest in bed undoubtedly moderates it but in some cases rest in bed, sponging, phenacetin, &c., have little effect upon it. I have only seen in one or two isolated cases any real improvement in the physical signs. In the treatment of tuberculous disease of the epiglottis giving rise to much difficulty of swallowing I believe that amputation of the epiglottis is a proper method of treatment and I intend to try it. Mr. H. S. Barwell kindly allowed me to see some of his cases in the Mount Vernon Hospital at Hampstead in which much relief had resulted from this treatment.

I have tried intravenous injections of iodoform in one case only but the disease steadily went on extending so that I was not encouraged to try this method again. I may say here that I have no experience of the tuberculin treatment of pulmonary tuberculosis and up to quite recently I have been quite disinclined to try it in any stage of the disease, but Professor A. E. Wright's valuable researches into the subject of the opsonins have shed a new light upon it. It is a matter which must engage the attention of all those who have to treat phthisis.

Death has nearly always been preceded by attacks of difficulty of breathing. These attacks become more severe, the patient ultimately dying in one. Our Armley institution is, as I have said, intended for advanced cases but the rules allow the admission of a few acute early febrile cases. These cases are treated in shelters and on verandahs even for long periods of time if there is any chance of permanent good resulting. If the fever subsides and the patient's condition warrants it he would be transferred to Gateforth. The home of rest must necessarily be much more accessible than the sanatorium need be. In Leeds it is accommodated in a large adapted mansion and grounds in the higher parts and near the confines of the town.

3. In the selection of cases for Gateforth Sanatorium on the one hand and for the Armley Home of Rest on the other it only too often happens that many have to be rejected for the sanatorium whose disease is not sufficiently advanced to make them eligible for a home of rest. This intermediate class of case may diminish as cases are recommended or apply to us earlier in the disease, but still it cannot disappear. For these intermediate cases it seems to me that another institution is required. It should not, in my view, be a part of the home of rest nor yet of the sanatorium, or at any rate these cases should not be housed under the same roof as the advanced or the early cases. This third institution would be a hospital for consumptives. The stay in it would be comparatively short—say, from six to eight weeks. The patient would be carefully instructed in what he has to do to avoid spreading the disease to others. He would no doubt improve during his stay in the hospital; it would give a short breathing time to those who are keeping the home together and it would permit of the house being thoroughly disinfected. The object of this hospital would be largely, but not wholly, preventive in character and educational. Febrile cases would be treated here and their subsequent course would determine what should eventually be done with them. Suitable provision could also be made here for the observation of suspected cases of pulmonary tuberculosis for the purposes of diagnosis. Only a short stay would satisfy this requirement in the majority of doubtful cases. The hospital would need to be accessible and situated in as healthy a part of the town as possible, preferably near its boundary.

4. A city office, including a board-room and an out-patient department, would complete the scheme. This must be situated in the centre of the town.

As an integral part of any scheme for dealing with pulmonary tuberculosis in our large centres of population the prevention of the disease must receive close attention. It is most important that the medical officer of health should be in close contact with the scheme. Fortunately our medical officer of health (Dr. J. S. Cameron) is on our committee and gives us valuable help. We supply the sanitary office with the names and addresses of all patients who apply to us for relief. Thus, when a patient is removed to one or other of our institutions his house can be disinfected. The list of discharged patients is also furnished to the sanitary office, so that they can be kept under observation. Cards with printed instructions on them are given to every applicant at the office and he is invited to buy at cost price spit-bottles and paper handkerchiefs. These articles are presented to those who cannot afford to buy them. Rules as to how the patient is to deal with his sputum are posted up in the wards of our institutions. A clear violation of these rules after a warning leads to the discharge of the offender.

The above scheme may seem to be a somewhat elaborate one. The prevention and treatment of pulmonary tuberculosis is, however, a complex and at the same time a costly undertaking, but with the present mortality from this disease, surely it is worth the labour and the money spent upon it if only we succeed in reducing the heavy death-rate from a disease which should, at least from the theoretical aspect, be completely preventable.

Remarks
ON
THE EVOLUTION OF OPERATIVE GYNÆCOLOGY,

Being a Valedictory Address Delivered at the Annual Meeting of the North of England Obstetrical and Gynæcological Society at Manchester on Jan. 19th, 1906,

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GENTLEMEN,—In the early days of an operation which is intended to remove some defect the operator aims directly at the object to be fulfilled. He roughly estimates the difficulties and dangers, many of which he cannot foresee, as the route he is taking has never been traversed before. His is not the lot to elaborate and to devise improvements the necessity for which is as yet unknown. Hence, early methods are crude and devoid of niceties of execution. Then improvements are added and improvements on improvements, until simplicity is overlaid with complexity. For a time the attention of operators is directed towards combating one or other of the many difficulties they or their predecessors have encountered. Their efforts are solely expended on details, to the surmounting of isolated obstacles, frequently to the neglect of the "unities" of

the operation. When this has gone on for a time a reaction sets in. Complicated methods are abandoned and a return is made in the direction of the primitive simplicity shorn of its crudities. It is interesting to note how this striving after perfection in operative procedure is cyclical in its course; it forsakes the primitive simplicity and makes for complexity, and when furthest from its starting point it tends to return there. Crude directness of purpose gives place to elaboration of method which, in its turn, yields to that effective simplicity which represents the high water mark of applied knowledge.

In few matters is this more forcibly shown than in surgical operations on the abdomen which involve exceptional difficulties owing to the close contiguity of many important organs and to the fact that the whole procedure takes place in a cavity into which only a limited access is obtainable. Beyond this there is the risk of hæmorrhage and of the possible escape into the abdominal cavity of exudative products from the tissues dealt with by the knife. Take, for example, Cæsarean section; suturing of the uterine wound was performed as far back as the beginning of the last century and even earlier, one or, in some instances, three sutures being used. Subsequently suturing fell into disuse. I can remember many years ago discussing with one of the greatest authorities of the day on Cæsarean section, my colleague, Thomas Radford, the question of suturing the uterine wound, when he spoke strongly against suturing, stating that the unaided contraction of the uterus was sufficient to prevent leakage from its cavity. At the present time suturing the uterus is regarded as one of the chief means of securing success, but then the mode of applying the sutures has been vastly improved since the days when one or two were deemed sufficient. Whilst suturing the uterine wound was still a debateable point the enormous fatality of Cæsarean section induced Porro to put into practice an operation he devised for the total removal of the gravid uterus. The principles of this operation had long before been suggested but had never been tried in the human subject. This operation, as a premeditated operation, was first performed by Porro in 1876. Its success led to a material reduction in the mortality of the operation for the delivery of women with pelvic obstruction so extreme as to be incompatible with the passage of a child, but exception was taken to it as a mutilating operation which deprived the woman of her natural functions. A return was then made to the primitive mode of abdominal delivery. Improved methods were devised which greatly reduced the mortality of the operation and at the same time avoided removal of the uterus. It was at this period that attention was specially directed to the suturing of the uterine wound. Amongst the modifications in the mode of applying the sutures may be mentioned those of Frank, of Kehrer (in which the uterus was incised transversely about the position of the internal os), and of Sänger; in all of them the apposition of the edges of the uterine wound claimed the most attention. Kehrer advised double sutures; some deep seated for the union of the muscular wall; others superficial to bring the peritoneal aspect of the wound into apposition. Sänger went further; he separated the peritoneum round the wound from its muscular bed and then pared a wedge-shaped strip of tissue from the edges of the wound and inserted deep sutures in such a way as to include the muscular coats whilst avoiding the mucous membrane; the edges of the peritoneum were subsequently more accurately united by superficial sutures placed closely together. The object was to make a sound impermeable closure. Here we have a return to sutures after they had been entirely abandoned. These improved methods of performing Cæsarean section have inverted the previous rates of recovery and of mortality: formerly the mortality reached 70 to 80 per cent.; at the present time the recoveries number 80 per cent.

As another example of returning to previously relinquished methods in the course of operative evolution, take operations on the cancerous uterus which in the first instance were performed through the abdomen. In 1828 Blundell removed the entire uterus through the vagina for cancer but the results were bad and the operation was abandoned. After this the cervix only was attacked through the vagina. Then return was made to total removal with improved methods: ligatures were applied before the structures were divided and after removal of the uterus the vagina was packed with gauze which acted as a drain. The latest method of removing the cancerous uterus is that of Wertheim, through the abdomen, the primitive path for the removal of uterine tumours. Again, the cure of vesico-vaginal fistula was performed in the early part of the last century by simply paring the edges of the opening and bringing them together with ordinary sutures. Then silver wire was substituted, then split leaden pellets placed over the sutures were squeezed together so as to grip the sutures in place of tying them. Bozeman introduced metal plates with a series of holes through which the sutures were passed and the pellets fastened on. This was done in order to prevent the pellets being buried in the tissues by inflammatory swelling. All these modifications were found to be needless and injurious. At the present time silkworm-gut or catgut sutures are used in the ordinary way, which is practically a return to the original method. The complicated modes of uniting the ruptured perineum with quilled sutures and other elaborate devices have in their turn given place to the original simple suture.

The mode of dealing with the stump of the pedicle in ovariotomy has passed through many varied phases. In 1842 Charles Clay ligatured the pedicle and brought the ligature through the lower end of the abdominal wound, partly to act as a drain, but more especially to provide for removal of the ligature when its separation from the pedicle had taken place. In 1861 Tyler Smith ligatured the pedicle and after cutting the ligature short dropped the stump into the abdomen. Next came the clamp in all its forms, then the stitching of the stump of the pedicle to the abdominal wound. After this was the reign of the drainage-tube. At the present time we have reverted to the plan of cutting short the ligature and dropping the stump into the abdomen, only using the drainage-tube in exceptional cases.

When we glance over the vista of operative evolution we encounter two prominent features—the absence of anything like finality and the dominant tendency to revert to the primitive conception. This being so in the past, it is obviously more than probable that change will still follow change; what is orthodoxy to-day is heresy to-morrow. With this thought in our minds let us critically examine side by side the two operations by the vaginal and by the abdominal routes—now resorted to for removal of the cancerous uterus—and endeavour to estimate their relative advantages as regards the difficulty of performance and the duration of the operation, the amount of skilled assistance that is required, the risk of injury to contiguous organs, and the danger of hæmorrhage and of shock.

The difficulty encountered in removing the uterus by the vaginal route is usually not great. In nulliparous or in old women, however, in whom the vagina is narrow, and especially if the vagina is infiltrated with the cancerous deposit, the difficulties are materially increased. The duration of the vaginal operation is much shorter than that by the abdominal route; and the necessity for a number of skilled assistants is less. Greater skill and judgment are required for the removal of the uterus through the abdominal wall; there is more risk of injury to the ureters, to the bladder and other pelvic viscera, and the minute dissection which is needed to separate the new growth from the healthy tissues, especially from the blood-vessels with corresponding risk of hæmorrhage, all contribute to render the abdominal operation a more formidable procedure than the vaginal operation. The frequently excessive duration of the abdominal operation and the depressing effects of the prolonged exposure of the open abdomen (however warm the atmosphere of the room may be) are each and every one adverse factors, to which may be added a greater risk of septic infection. However carefully the operation be performed there is no evidence as yet that the abdominal operation affords less risk of recurrence of the cancer than does the vaginal method. In addition to the ill-effects that are directly due to the prolonged manipulation of the abdominal contents the protracted administration of the anæsthetic is of serious import. It has been found after lengthy periods of chloroform inhalation that death has occurred many hours, and even days, after an operation and that it was difficult to assign a cause for it. In some of these cases post-mortem investigation has revealed extensive fatty changes in the tissues, especially in the heart, due to the prolonged action of the anæsthetic. The inference to be drawn from all this is that when practicable the vaginal operation is distinctly to be preferred to the abdominal method which should be reserved for exceptional cases.

It is not alone in the mode of performing operations that our department of the profession has developed and is developing; evolution is also at work as regards ourselves and our professional status. We spring from the man-midwife whose function it was to deliver women in labour, and more especially when the labour was unnatural or

difficult. As time went on he undertook the treatment of such uterine troubles as he could compass during, and apart from, the pregnant condition. As knowledge advanced treatment became more active and the man-midwife, now developed into the obstetric physician, enlarged his sphere of action and undertook operative work on women of a more strictly surgical nature until at the present time operative gynæcology, owing to the brilliancy of its results, has caused the obstetric physician to assume more and more the rôle of an operating surgeon with a tendency to recede from obstetrics. This evolution is now receiving official recognition: the title of obstetric physician is being changed in some general hospitals to that of gynæcological surgeon. The natural result will be that just as the general operating surgeon does not practise midwifery, neither in future will the gynæcological surgeon. Indeed, it is not in keeping with the fitness of things that the man who is constantly occupied in surgical work should attend labours. But as there must always be those who are exceptionally qualified to act as obstetricians the primitive usage will be reverted to and place will still be found for the obstetric physician who will be what the name indicates—a specially skilled man-midwife.

Surgery owes much to the gynæcologist who led the way in the performance of abdominal section. It is no small matter that the gynæcologist can justly claim precedence in thus dealing with this all-important region. It was the gynæcologist who showed how the abdominal cavity may be laid open and its contents freely dealt with; how large growths and integral portions of the anatomy may be removed and cysts filled with septic pus may be evacuated, all without rise of temperature or of pulse-rate and with a continuously tranquil peritoneum, that dreaded membrane of the older surgeon. The potentiality having been demonstrated, more and more boldness has been shown until the surgeon now regards an exploratory incision as an ordinary aid to diagnosis. Obviously all this would not have been possible without the antiseptic methods we owe to Lister, which, after passing through a phase of complexity and steam sterilisers, have now resolved themselves into the practice of bacteriological cleanliness of the patient, the hands of the operator, and of the instruments he uses.

Before concluding permit me to direct the attention of the society—and especially of those members who in the future may practise on the lines I have indicated—as pure obstetric physicians—to the immense benefit that would accrue to medical science by the study of an extensive and systematised series of observations of some subjects which are intimately associated with the practice of midwifery. I allude to prenatal diseases, especially those of specific causation and to the diseases of pregnancy such as eclampsia, blood diseases, and chorea. A closer investigation of prenatal diseases would lead to their more general recognition and treatment, which, in my opinion, would tend materially to reduce the birth-rate of the unfit. The study of these diseases would be furthered by the allocation of a few beds for the purpose in all maternity hospitals. In like manner the exceptional opportunities afforded to the gynæcological surgeon might be utilised in the study of cancer from its clinical aspect. By systematised investigation of each case that comes under notice and by massing together the facts obtained so as to facilitate subsequent reference much light might be thrown on this most important subject.

AN EXPERIMENTAL INVESTIGATION OF THE BUDDE PROCESS FOR THE PRESERVATION OF MILK.

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THE importance of a pure milk-supply is admitted by all but the difficulty of supervision of farms and dairies and the ignorance of many of their owners, the problem of transit, particularly in the hot weather, the unhygienic condition of the premises of many of the farms and smaller vendors, and, lastly, the universal custom of keeping and delivering milk in open vessels, instead of in closed bottles (as is the custom in America and the Continent) render it almost impossible to obtain any ordinary milk in a condition which can be regarded as satisfactory, much less as safe. It is largely the insanitary conditions and methods which exist at the farms that have rendered the extensive use of preservatives necessary (I use the term advisedly). The initial contamination of the milk is such that in hot weather many millions of bacteria per cubic centimetre may develop in a few hours, and within 24 hours much of the milk delivered in London would, I believe, be unusable but for the addition of preservatives. I hope this will not be construed into meaning that I advise the addition of preservatives; I do believe, however, that under present conditions the moderate addition of preservatives is less dangerous than the use of a semi-putrid milk—it is the lesser of two evils.

Four conditions would much tend to mitigate the evil and do away with the necessity for preservatives. These are (1) strict sanitary measures in dealing with the milk at the dairy—i.e., in the milking, &c.; (2) the immediate chilling of all milk after milking; (3) the provision of refrigerator vans for transit; and (4) the vending of milk in closed bottles. These conditions, however, can only be obtained by a combination between the farmers in a district—that is to say, by coöperation. The initial expense of refrigerators, bottles, &c., is too great for the smaller farmers to incur and it is only by pressure brought by a large and united *clientèle* on the railway companies that proper refrigerator vans will be provided and a reduction in freight for bottles (which is now much too high) will be obtained. However satisfactory the conditions may become at the farm one mode of treatment only will prevent the chance contamination of milk with the viruses of tubercle, typhoid fever, diphtheria, scarlet fever, &c., and that is some form of sterilisation. Treatment by heat, either in the direction of complete sterilisation or by pasteurisation, has been extensively used. The objection to sterilisation is that to be complete a temperature above 100° C. is necessary and this produces a marked flavour and undoubtedly diminishes the nutritive and digestive qualities of the milk. To pasteurisation, which consists in heating the milk to from 68° to 70° C., the same objection cannot be made; all non-sporing disease germs are destroyed, the flavour is less altered, and the nutritive qualities are less diminished. But pasteurised milk is by no means sterile and its keeping qualities are not greatly prolonged unless the process is followed by efficient chilling. I am also informed that there is a considerable tendency nowadays to run the milk rapidly through the pasteurising apparatus instead of allowing the milk to remain at the proper pasteurising temperature for 20 minutes or so, as should properly be done. Such a procedure would necessarily allow many pathogenic forms to remain alive and would engender a false sense of security

My attention was recently directed to the Budde process of treating milk, invented and patented by a Danish engineer, Mr. Budde, and now being applied extensively and on a commercial basis in Denmark and Sweden. During the summer of 1905 17 creameries or coöperative dairies in these two countries have each installed a plant for "Buddeising" and bottling milk. The principle of this process is as follows. The milk is obtained in as cleanly a condition as possible, and if it has to be kept for any time before treatment it is efficiently chilled, but usually it is treated soon after milking. A proper proportion of peroxide of hydrogen is added to the milk and the mixture is heated to from 51° to 52° C. for at least three hours. A temperature below 48° C. is not efficient and one above 55° C. should be avoided as this tends to induce changes in the milk. With the aid of the heating the hydrogen peroxide is completely decomposed into water and oxygen by an enzyme (catalase) present in the milk, and the oxygen at the moment of liberation being in a nascent condition acts as an efficient germicide. At the end of the process the whole of the hydrogen peroxide should have been decomposed, provided the right proportion has been added, so that no antiseptic remains, a small but inappreciable addition of water has been made to the milk, and the majority of the micro-organisms have been destroyed. The amount of hydrogen peroxide required to obtain this result is about 15 cubic centimetres of a 3 per cent. solution per litre of milk, so that the quantity of water added to the milk amounts to about 1·5 per cent., which, on a basis of 3 per cent. of fat, would reduce the percentage of fat to 2·95 in the treated milk, a reduction in the percentage of fat of about

0·05, an amount which may be regarded as negligible. The milk is treated in bulk and immediately bottled with suitable precautions and supplied to the public in the bottles, a fact which alone should commend it. The milk so treated is practically unaltered in appearance and flavour, the cream rises as usual, all ordinary non-sporing pathogenic germs are destroyed, and the milk will keep sweet for at least eight or ten days in hot weather.

The capacity of the natural milk to decompose hydrogen peroxide varies, presumably on account of variations in the catalase content. With some of the continental milk less than 15 cubic centimetres of the 3 per cent. peroxide can be decomposed and it is necessary in such cases to add something, e.g., yeast enzymes, which will decompose the excess of peroxide and render the treated product free from this agent. English milk, however, will decompose on an average 17 cubic centimetres of the peroxide per litre, so that there would be no need in this country to make any such addition; the milk itself would completely decompose the requisite quantity of hydrogen peroxide. Even supposing that a small amount of the peroxide did remain undecomposed it could hardly be in any way deleterious; the amount would be infinitesimal. I believe that small quantities are quite non-poisonous and non-deleterious and in the stomach any excess would immediately be decomposed. The enzyme "catalase" has been described by O. Loew[1] and the interaction between various enzymes and hydrogen peroxide has been investigated by Vanderwelde, Waele, and Sügg.[2]

An important consideration is whether the Budde process alters the nutritive qualities of the milk. Of this I have no personal experience, but Lindman[3] states as the result of an extensive use of the "Buddeised" milk in cases of diarrhœa and digestive disturbance that it can be used with the greatest benefit in these conditions and that the nutritive qualities are unimpaired for infant feeding.

I may now give in detail the results of the experiments I have conducted with a view to test the efficiency of the Budde process. The milk was obtained fresh from an Essex farm, chilled at the dairy, and reached the laboratory usually at about 11.30 A.M.—i.e., some four to five hours after milking. It was brought in screw-stoppered bottles of one-litre capacity and on arrival at the laboratory was immediately dealt with. The method of procedure was as follows. Young cultures of the various micro-organisms on solid media were used; these were emulsified in sterile tap-water and the suspensions were allowed to stand for a quarter of an hour, so that the larger particles might settle. The milk in the bottles was emptied into clean glass flasks and from four to five cubic centimetres of the thick suspension of the micro-organism to be tested were added, and the whole was thoroughly mixed; the mixture was then returned to the bottles through a sterile glass funnel. The requisite amount of the peroxide (at the rate of 15 cubic centimetres of a 3 per cent. solution per litre) was next added, the bottles were closed, the contents were thoroughly mixed, and the bottles were wholly immersed in a water-bath kept at 52° to 53° C. Sufficient time was allowed for the contents of the bottles to attain a temperature of 51° to 52° C., and the heating was continued for a further period of from three to three and a half hours after this. Plates and cultures were made from the milk with the added micro-organisms before and after treatment so that the efficiency of the process could be ascertained. The preliminary mixing of the cultures and milk in flasks (and not in the bottles) was to avoid the chance of any of the micro-organisms becoming deposited in the thread of the screw in the mouth of the bottles, where the organisms might have been unacted upon by the peroxide, and at the end of the process might have contaminated the bulk of the milk and so have vitiated the results. Several tests were made to ascertain the effect of the heating alone—i.e., to some of the bottles *no* peroxide was added—but otherwise they were treated in the same manner as those to which the peroxide was added. Similarly, in other cases the milk without added micro-organisms was treated and tested. In all cases a much larger quantity of the infected milk was added to the test cultures, &c., after treatment than was used for the control cultures, &c., before treatment, and in nearly all cases each experiment was in duplicate or triplicate—i.e., two or three bottles were treated and tested.

The following is a type of the method of experimentation adopted:—

Experiment VIII.—Bacillus typhosus (agar cultures). Sept. 6th, 1905. The test cultures were made on Conradi plates.

A. *Controls before treatment.*

Bottle 1. 1 loop (Conradi plate) = several typhoid colonies.
" 2. 1 " (" ") = a few typhoid colonies.
" 3. 1 " (" ") = " " " "

B. *After treatment.*

Bottle 1 *a*. 0·1 c.c. (Conradi plate) = not a single colony.
b. 0·1 c.c. (" ") = " " " "
Bottle 2 *a*. 0·1 c.c. (Conradi plate) = not a single colony.
b. 0·1 c.c. (" ") = " " " "
Bottle 3 (heated, but no peroxide added).
a. 0·1 c.c. (Conradi plate) = number of typhoid colonies.
b. 0·1 c.c. (" ") = " " " "

Experiment XIV. Bacillus tuberculosis.—As I was unable to obtain natural tuberculous milk the milk was infected in two ways and then treated. One method was to dry some sputum rich in tubercle bacilli *in vacuo* over sulphuric acid, to grind up the dry residue with water, so as to form a thin suspension, which was strained through muslin and added to the milk. The other was to make a suspension of a glycerin agar culture of a virulent bovine strain and add to the milk. The guinea-pig test was alone employed.

Sputum suspension (Sept. 5th, 1905).

A. *Control, before Treatment.*

Guinea-pig 63 (1 c.c. injected). Killed Dec. 5th, 1905. Caseous glands and tuberculous nodules in the spleen and liver.

B. *After Treatment.*

Guinea-pig 32 (2 c.c. injected). Killed Dec. 5th, 1905. No trace of tubercle.

Experiment XV., culture suspension (Sept. 5th, 1905).

A. *Controls, before Treatment.*

a. Guinea-pig 62 (1 c.c. injected). Died Sept. 29th, 1905. Tuberculous nodules in kidneys, liver, and peritoneum.

b. Guinea-pig 55 (1 c.c. injected). Died Nov. 28th, 1905. Tuberculous nodules in spleen, liver, and lungs. Inguinal glands large and caseating.

B. *After Treatment.*

Guinea-pig 60 (2 c.c. injected). Killed Dec. 5th. No trace of tubercle.

Experiment XVI. Sputum suspension. (Sept. 6th, 1905.)

A. *Control, before Treatment.*

Bottle 1. Guinea-pig 57 (1 c.c. injected). Killed Nov. 14th, 1905. Tuberculous glands and spleen.

B. *After Treatment.*

Bottle 1. Guinea-pig 45 (2 c.c. injected). Killed Dec. 5th, 1905. No trace of tubercle.

A. *Control, before Treatment.*

Bottle 2. Guinea-pig 20 (2 c.c. injected). Died Sept. 29th, 1905. Tuberculous nodules in mesentery.

B. *After Treatment.*

Bottle 2. Guinea-pig 56 (2 c.c. injected). Killed Dec. 5th, 1905. No trace of tubercle.

Experiments XIV., XV., and XVI. conclusively prove that the Budde process destroys the tubercle bacillus in milk.

In all, two experiments were performed with the bacillus diphtheriæ, two with the bacillus acidi lactici, three with the bacillus coli, two with the bacillus typhosus, one with a paratyphoid bacillus, one with the bacillus dysenteriæ, one with the cholera vibrio, one with the micrococcus pyogenes aureus, three with the bacillus tuberculosis, three with the bacillus anthracis (sporing), one each with the bacillus subtilis and bacillus mycoides (both sporing), two with the penicillium glaucum, and several to ascertain the reduction effected in numbers of the natural flora of milk by the treatment. In the treated milk a progressive increase in the number of organisms occurs as the milk is kept, but even after ten days the number is four-fifths less than in the original milk before treatment. On two occasions the acidity of the milk before and after treatment was determined by titrating with $\frac{N}{10}$ caustic soda and phenolphthalein and was found to be unaltered. Several samples were tested (with starch and potassium iodide) after the treatment for the presence of a residuum of hydrogen peroxide but none was detected. The treatment was not found to alter in any way the colour, odour, taste, and appearance of the milk, and the cream rises in a normal manner after the treatment. Samples were tasted by a number of indviduals and practically no alteration could be detected as a result of the process.

The conclusions which may be formulated from these experiments and observations are as follows:—

1. All the non-sporing organisms, pathogenic and non-pathogenic, dealt with—viz., the bacillus tuberculosis, the

[1] Bulletin, Department of Agriculture, Washington, 1900.
[2] Beiträge zur Chemischen Physiologie und Pathologie, Band v., Hefte 11 und 12, 1904.
[3] A paper read before the Society of Physicians of South Sweden, 1904.

bacillus diphtheriæ, the bacillus acidi lactici, the bacillus typhosus, the bacillus coli, the bacillus dysenteriæ, a paratyphoid bacillus, the micrococcus pyogenes aureus and the cholera spirillum—are destroyed by the process.

2. Sporing forms—viz., the bacillus anthracis, the penicillium glaucum, the bacillus subtilis, and the bacillus mycoides—are not destroyed by the process although reduced in numbers, the inference being that the vegetative forms are destroyed but the spores are not destroyed.

3. Although the heating *per se* may be efficient in destroying certain non-sporing organisms—e.g., the bacillus diphtheriæ, the bacillus typhosus, and the cholera spirillum—it is not so in all cases. Thus in one experiment the bacillus typhosus and the micrococcus pyogenes aureus survived the heating when no peroxide was added, and under similar conditions the bacillus acidi lactici survived in the two experiments in which this was tested.

4. The same fact is strikingly shown by the effect of "Buddeising" on the natural milk—i.e., the milk without added micro-organisms. The reduction in numbers effected by heating alone is far less than with "Buddeising."

5. "Buddeised" milk is practically indistinguishable from untreated milk in taste, odour, appearance, and in the rising of the cream. No increase in acidity is caused by the treatment.

6. "Buddeised" milk will keep perfectly sweet and apparently unaltered in odour, taste, and appearance for at least from eight to ten days in hot weather and for a still longer period in cold weather.

7. In milk obtained in the ordinary way without *special* precautions the micro-organisms are reduced by the Budde process over 99·9 per cent. In the milk kept at room temperature the small residuum of living micro-organisms multiplies daily and ultimately (after from 12 to 14 days) may cause the milk to go bad.

8. The distribution of the "Buddeised" milk in closed bottles is in itself a great improvement on the routine system that obtains in this country of distribution in open vessels.

9. The method excludes all possibility of adulteration of the milk by the vendor before it reaches the consumer.

10. Properly carried out, the whole of the added hydrogen peroxide is decomposed at the end of the process and no trace of it can be detected in the treated milk.

If, as I am informed, the Buddeised milk can be produced without necessarily raising the price to the consumer above the ordinary rates, and if the nutritive qualities of Buddeised milk are unimpaired, of which there seems to be good evidence, the process appears to have a great future before it for infant, child, and invalid feeding and in the treatment of gastro-intestinal disorders.

In conclusion, I have to thank Mr. Richard Rythen of Bread Street House, London, E.C., who is introducing the process into this country, and Mr. P. Monrad, chemist to the Danish Budde Company, for their assistance in carrying out the above work.

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TWO CASES OF LEUKÆMIA TREATED BY THE ROENTGEN RAYS.

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As the effect of the Roentgen rays on leukæmia is attracting considerable attention at the present time I have thought that some notes of two of my patients suffering from this disease and undergoing this form of treatment may be of interest. Neither case is represented as being complete, as treatment is being continued at the present time.

CASE 1.—The patient, a widow, aged 50 years, had complained for about four months of progressive weakness accompanied by increasing enlargement of the abdomen; she had been losing weight and complained of sleeplessness. She had been previously a very healthy woman but had suffered from malarial fever contracted in Malta (Malta fever?) and also had suffered from sore throats. She had had three children, all of whom were living and healthy. In July, 1905, a diagnosis of leukæmia was made. At this time the patient was very weak and was rapidly getting worse; she complained of great pain and tenderness over the region of the spleen. Her temperature ranged from 99° to 100° F. in the morning and in the evening from 100° to 103°; she also had occasional rigors. Her spleen was found to be enlarged considerably and reached beyond the middle line; the lower margin could not be felt above the pubes. A blood count taken on July 26th resulted as follows: erythrocytes, 3,047,520 per cubic millimetre; and leucocytes, 400,147 per cubic millimetre, giving a ratio of 1 white to 7·6 red corpuscles. A differential count was not taken. X ray treatment was at once commenced and carried out daily, Sundays excepted. It consisted of ten minutes' exposure of the splenic area, five minutes' exposure of the sternum, and ten minutes' exposure of the knees with a hard tube, taking about two to two and a half milliampères on the secondary, the tube being about 12 to 15 inches from the skin. The patient had also intramuscular injections of arsenic in full doses; these were discontinued on Sept. 15th.

Blood counts were taken from time to time by independent observers. On August 1st the pain in the region of the spleen was much relieved and the patient slept much better. On Sept. 6th the general health had much improved and the patient declared herself as feeling altogether better. Her temperature was now rarely above 100° in the evening. On the 16th treatment was temporarily discontinued. She went to the country, returning on Oct. 3rd much better in general health. Daily treatment was again resumed. On Nov. 8th treatment was again interrupted for 14 days, being resumed on Nov. 23rd. Treatment daily from Nov. 23rd to Dec. 8th showed a further drop in the number of leucocytes from 72,300 to 32,200 per cubic millimetre. The patient's general condition is still improving, her weight has increased, and the size of the abdomen has diminished. The spleen is much smaller, reaching now to one inch to the left of the umbilicus and one and a half inches above the pubes.

Daily treatment is being continued and the following table illustrates the results of treatment to the end of December, 1905:—

Date.	Ratio of white to red blood corpuscles.	Hæmoglobin (per cent.).	Red blood corpuscles (per c.mm.).	White blood corpuscles (per c.mm.).	Polymorphonuclear cells (per cent.).	Myelocytes (per cent.).	Other forms (per cent.).
1905							
July 26th	1 to 7·6	60	3,047,520	400,147	—	—	—
August 2nd	1 to 6·7	—	3,085,000	461,548	—	—	—
,, 13th	1 to 6·3	57	3,150,000	499,000	40·0	39·2	20·8
Sept. 6th	1 to 7·5	—	3,200,000	426,000	—	—	—
,, 16th	1 to 13·1	—	3,810,000	290,625	—	—	—
Oct. 12th	1 to 20·7	—	4,696,000	226,800	45·0	19·0	3·6
,, 27th	1 to 34	79	3,975,000	117,000	—	—	—
Nov. 9th	1 to 63	81	4,550,000	72,300	51·2	34·8	14·0
Dec. 8th	1 to 141	—	4,550,000	32,200	—	—	—

CASE 2.—The patient is a young married woman, aged 23 years. A brief account of her illness and treatment has already been published.[1] The patient had suffered from epistaxis from childhood and had rheumatic fever at the age of 18 years. She was confined on Feb. 17th, 1904, and subsequently had severe post-partum hæmorrhage which was with difficulty stopped. On April 1st she noticed some swelling of the abdomen which continued to increase. She lost flesh rapidly. Menstruation had not reappeared after her confinement. She was admitted into Charing Cross Hospital on Sept. 10th, 1904, under the care of Dr. J. Mitchell Bruce. She was at this time very anæmic in appearance, her tissues were wasted, and the abdomen was greatly increased in size. Her spleen reached downwards to the pubes and extended laterally to within half an inch of the middle line. Its outline was ill defined; it was somewhat tense and on deep pressure was slightly tender. The urine was acid, of specific gravity 1022, and contained no albumin. Auscultation of the heart discovered well-marked aortic and mitral regurgitation. Blood examination showed: red blood corpuscles, 2,300,000 per cubic millimetre; white blood corpuscles, 1,440,000 per cubic millimetre; myelocytes, 34·4 per cent.; polymorphonuclears, 52·5 per cent.; eosinophiles, 6 per

[1] A case of Splenomedullary Leucocythæmia treated with X Rays, Medical Electrology and Radiology, April, 1905.

cent.; nucleated red corpuscles, 6 per cent.; poikilocytosis was fairly marked; hæmoglobin, 34 per cent. The temperature on the average fluctuated between 98° and 100° F. On Oct. 9th the patient was still unable to leave her bed and it was decided to try x ray treatment. Ten minutes' exposures with a hard tube were given over the splenic area only every day until the end of October with an interval of six days' rest after the first nine days of treatment. On Oct. 16th she was able to get up and on the 28th was discharged from hospital. A blood count taken on this date resulted as follows: red blood corpuscles, 3,020,000 per cubic millimetre; white blood corpuscles, 232,000 per cubic millimetre; and hæmoglobin, 37 per cent. Poikilocytosis was much decreased and the proportion of myelocytes was apparently diminished. The spleen was smaller, its lower edge being now one and a half inches less towards the pubes, and its whole outline was better defined.

Since her discharge the patient has been able to walk to the hospital and to attend for treatment as an out-patient. Exposures of ten minutes over the splenic area, sternum, and knees were given each day on alternate weeks. In December menstruation reappeared and was afterwards regular. In January a blood count showed: red blood corpuscles, 3,862,000 per cubic millimetre; white blood corpuscles, 95,000 per cubic millimetre; and hæmoglobin, 44 per cent. In February another count was taken as follows: red blood corpuscles, 4,750,000 per cubic millimetre; white blood corpuscles, 42,200 per cubic millimetre; and hæmoglobin, 46 per cent. The spleen was now much smaller. The patient had increased in weight, was looking better, could walk without fatigue, and could attend to her household duties. From this time on, however, she did not come regularly, her attendances as an out-patient numbered from five to nine each month, and although her general condition appeared to be satisfactory and she could easily perform her duties at home the result of blood examinations show that the improvement reached has not been quite maintained.

The following table shows the differential blood count at various dates:—

Date.	Ratio of white to red blood corpuscles.	Hæmoglobin (per cent.).	Red blood corpuscles (per c.mm.).	White blood corpuscles (per c.mm.).	Polymorphonuclear cells (per cent.).	Myelocytes (per cent.).	Other forms (per cent.).
1904							
Sept. 10th	1 to 1·6	34·0	2,300,000	1,440,000	52·2	34·4	13·4
,, 30th	1 to 2·1	32·5	2,360,000	1,110,000	—	—	—
Oct. 28th	1 to 13	37·0	3,020,000	232,000	57·4	30·2	12·4
1905							
Jan. 6th	1 to 40	44·0	3,842,000	96,000	61·0	27·0	12·0
Feb. 21st	1 to 112·5	46·0	4,750,000	42,000	63·0	23·0	14·0
April 4th	1 to 65	—	4,280,000	97,700	65·25	14·25	20·5
July 14th	1 to 22	70·0	4,040,000	183,000	—	—	—
Sept. 9th	1 to 20·6	70·0	4,170,000	202,000	59·3	18·3	22·4

In Case 1 it is to be noted that treatment has been systematic and regular from the beginning and that a steady and progressive rate of improvement is being maintained up to the present time. The general health is better, the spleen is smaller, the temperature is normal, the number of red corpuscles has increased, and the number of leucocytes has fallen from 400,147 to 32,200 per cubic millimetre. The ratio of white to red corpuscles has decreased from 1 to 6·3 to 1 to 141. The proportion of polymorphonuclear cells has risen and the proportion of myelocytes has fallen. Thus in all the characteristic phenomena of the disease there is marked improvement. What the final issue of a case of this type will be it is of course impossible to say, but from a study of the reported cases[2] there is ground for hope that with increased experience in treating this disease improvements in technique will be followed by considerable improvements in the attained results.

The second case is specially interesting as the patient was at first exceedingly ill and presented all the appearance of an extremely grave case of leukæmia. Whilst treatment was regularly and systematically carried out the improvement was very striking. The bedridden patient was so far restored to health as to be able to resume control of her domestic duties and to walk to and from the hospital for treatment as an out-patient. The number of leucocytes was reduced from 1,440,000 to 42,200 per cubic millimetre and the ratio of white cells to red from 1 to 1·6 to 1 to 112·5. The number of red corpuscles increased from 2,300,000 to 4,750,000 per cubic millimetre. The patient gained considerably in weight and strength and the size of the spleen diminished. As so frequently happens, however, in hospital practice the patient, being in a condition once more to attend to her work at home, became careless and infrequent in her attendance and her clinical chart showed well how infrequent exposure to the x rays was accompanied by a slow but very perceptible increase in the number of leucocytes and a proportionate decrease in the total of red cells.

Theories as to the source of the curative effect of the x rays in leukæmia are no doubt interesting, but our knowledge of their therapeutic action must be indefinite until something more is known of the etiology of the disease. It is often assumed that the disease is microbic or parasitic and the general opinion at the present time seems to be that the x rays are non-bactericidal. I would like to point out, however, in this connexion that it is possible that the density to the x rays of the glass of which the culture tubes are made has not been sufficiently considered. Lead glasses are very dense to the rays and the glass used in the construction of the Crookes's tubes has to be specially prepared. The x rays therefore may yet be proved to have some bactericidal properties. It is possible also that some or all of the improvement noticed in the treatment of these cases may be due to some other emanations from the Crookes's tube and not to the x rays. Leucocythemia may be, of course, merely an exaggerated leucocytosis—i.e., an increased formation of leucocytes—or it may be an alteration in the metabolism of cells formed in the ordinary way, which leads to their prolonged life in the body and so to their increased number. The analogy between this disease and sarcoma has been frequently pointed out and the effect of the x rays upon new cell formation of a malignant type is well known. The curative effect of the x rays may be then another instance of their power over the growth of tumour cells.

It has been stated that a too rapid diminution of leucocytes in leukæmia is associated with the production of toxin and the exhibition of high temperature. High temperature has been associated with this disease always and was described long before the introduction of the x ray treatment. The patient in the first case had rigors even before treatment was commenced. In this case also a drop in the number of leucocytes of 40,000 per cubic millimetre was noticed in 11 days without any ill result. My own experience has been that decrease of white cells is invariably accompanied by marked improvement in the general condition of the patient.

The effect of x rays upon pigment is interesting. Case 1 had some pigmentation before treatment by the x rays was commenced. The pigmentation was general and was probably due to arsenic which had been previously given. The patient stated that she was very susceptible to sunburn. After exposure of the spleen to the rays had been carried out for some time the skin over the area became quite negroid in appearance. Some desquamation has taken place since felt has been used and the skin is now much lighter in colour. The great difficulty in this form of treatment is the production of a dermatitis from continuous exposure to the rays. This has the disadvantage of interrupting treatment and is painful and troublesome to the patient. In many of the cases that have been reported it is noticeable that this incident has interfered with the continuance of treatment.[3]

It is a striking fact that in most of the cases of dermatitis arising in x ray workers the changes in the skin are often limited to the hand and wrist and are not seen beyond the margin of the coat sleeve. This circumstance suggested to my mind the question whether dermatitis could not be eliminated by protecting the skin by layers of substance penetrable by the rays, such as linen, cloth, &c. In Case 2 one thickness of linen (table cloth) was interposed between the tube and the skin. Since this has been done there has been no suggestion of dermatitis and treatment has certainly not been hampered in any way by the use of the linen. In Case 1 four folds of felt, each one-eighth of an inch thick, were interposed at the time that the diminution of white cells from 72,300 to 32,200 per cubic millimetre was noticed in 11 days. In order to allow of

[2] The X Ray Treatment of Leukæmia, Ledingham and McKerron, THE LANCET, Jan. 14th, 1905, p. 71.

[3] Leucocythæmia treated by x rays, Brit. Med. Jour., July 1st, 1905.

larger dosage a heavy anode tube at a distance of 12 inches from the patient was used with a 22-inch coil, the amount of current on primary being 4 ampères, 100 volts. In addition to this, at the end of ten minutes' exposure the tube was given as much current as it would stand for one minute. I think the rapid decrease in the white cells just mentioned was due to the extra amount of electric energy used and yet no dermatitis or rise in the body temperature was noticed. On the contrary, there was an extraordinary improvement in the patient's condition generally.

With such large doses of rays as mentioned above, if given in the ordinary way, a very severe dermatitis would undoubtedly ensue very quickly, with possibly severe ulceration of the skin. By my method of protecting the skin I hope to be able to eliminate the burning effects to some extent and at the same time to obtain the fullest benefit from the rays when used as a therapeutic agent. It has been frequently stated that dermatitis is not the product of the x rays but that it is due to the direct action of the high-tension current used to produce the rays. My experience so far strongly supports this contention. The use of protective layers over the skin in these cases tends to illustrate the benefit that may be obtained in a similar way in other diseases in which the Roentgen rays are used and in which the production of a dermatitis is not desired. I hope experiments in this direction will be made and the results noted, as if increased dosage without dermatitis can be obtained a much larger field of usefulness for the rays will be opened up.

The effect of continued irradiation of other organs in relation to the spleen is not as yet accurately known. So far no case has been reported in which any deleterious effect has been noticed. The indefinite manner in which the dosage of the rays is of necessity stated in reporting the above cases is a matter for regret. It has been claimed that a satisfactory method of measuring the radiant energy has been discovered. The amount of rays produced in a Crookes's tubes is, however, dependent upon a number of factors, all of which are not within control. The tubes vary so enormously in efficiency that the quantity of current used, as indicated by a milliampère-metre on the secondary of the coil, can give no idea of the amount of rays produced, and it is well known that the penetrative power of the rays alters very considerably during an exposure of any length of time. The measurement of the amount of rays produced and of their penetrative power is a problem which still awaits solution.

Progress in radio-therapy has been so rapid that it is difficult to realise all that has already been accomplished. With such results, however, as are already obtained in leukæmia and in other diseases it is difficult to be anything but optimistic with regard to the future. Increased accuracy of dosage, improved methods of administration, and the elimination of all possible elements of risk to the patient are all points in which we may certainly expect advances to be made, with an almost certain expectation of a still wider field of usefulness for the Roentgen rays.

Weymouth-street, W.

"INTERRUPTED CIRCULATION" AS A THERAPEUTIC AGENT,

WITH ILLUSTRATIVE CASES OF RHEUMATOID ARTHRITIS.[1]

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[AFTER a few preliminary remarks and a brief allusion to his previous paper[2] under the same title, containing a reference to Harvey Cushing's[3] successful use of the tourniquet in a case of Raynaud's disease, and to George Oliver's[4] pioneer work in the study of tissue lymph in its relation to the circulation, Dr. Ewart commenced the main portion of his paper by describing the technique employed, in the following words :—]

A brief account of the procedure (which is essentially the same as in operations) had better precede the notes of the cases in which it was applied. In the absence of an Esmarch's tourniquet the simplest substitute is indiarubber tubing of suitable thickness, which is tightened round the limb in single or double loop outside a slight protecting pad. The tube can either be simply drawn tight, both ends of the loop being held, or else coiled over itself to any degree of tightness. As a preliminary the limb is to be rendered anæmic, the patient being in the reclining posture. In many instances the profound anæmia obtained by Esmarch's bandage need not be resorted to, though it is an essential for the best results, but the raised limb must be squeezed empty and kept elevated until after the application of the tourniquet. The relative duration of the constriction will also influence the result and will need to be varied according to the nature of the case. In my hands the shortest has been 30 seconds and the longest from three to five minutes. I have not exceeded six applications at one sitting, with a duration of two minutes each and with intervals of from one to two minutes. Three applications at each sitting may suffice in most cases and two sittings daily may be desirable. It is important to liberate the artery suddenly; and a distinct advantage is gained by lowering the limb into the vertical position, if this can conveniently be done, just before removing the ligature. With sufficient care the risk of any damage from excessive pressure at the seat of ligature is easily avoided. None of the cases hitherto treated have presented the slightest complication referable to the skin, to the vessels, or to the nerves. It need hardly be mentioned that inflamed or tender nerve trunks are an absolute contra-indication just as much as senile and calcified arteries.

THE CASES.

The cases belong to the following groups: (1) Subacute, subpyrexial synovitis, persistent or relapsing, in young subjects of rheumatic tendency; (2) deforming soft puffy nodular arthritis in women, with chronic quiet intra-articular and peri-articular effusions and thickenings; and (3) late massive arthritic thickenings, with articular rigidity or with much stiffness. The treatment was suspended in one case only—that of a stout, florid man of gouty temperament with chronic effusion and synovial thickening of the right knee of eight months' duration. As no visible reduction of the swelling was obtained after three sittings the further application of the method was postponed till other forms of treatment had been given a trial.

[Cases 1, 2, and 3 were those of acute or subacute relapsing rheumatoid arthritis, all in young women. They were treated in June and July, 1905, and all improved while under treatment; since their discharge, however, they have not been seen again.]

CASE 4. *Chronic rheumatoid condition, with acute painful seizures of fixation of joints and muscles.*—The patient, an unmarried female, aged 52 years, had always been healthy, in spite of a gouty tendency, but of late years she had been increasingly liable to acute rheumatoid swellings of the joints and stiffness of the muscles. In the autumn she had quickly recovered from her symptoms during a stay abroad; on returning to London she was seized the same night and rendered quite powerless by stiffness and pains, from which she slowly recovered. Her present attack, the worst she had ever had, began in April, 1905. When she came under treatment in June the very severe pain which she had suffered, apparently from acute neuritis, over the inner aspect of the head of the left tibia was less intense, but there were great aching and tenderness of the swollen left knee and of both hands, the shiny skin of which seemed to be too tight for the enlarged and stiffened phalanges. The temperature was normal or only slightly elevated at times. General treatment by saline laxatives, by colchicum and mercury, and local applications such as in particular of the compound liniment of iodide of potassium, did good. Neither these measures, however, nor massage made so marked and rapid an impression upon the stiffness, the swelling, and the pain as the treatment by interrupted circulation which was applied for upwards of three weeks, and the efficacy of which was demonstrated by limiting its employment to the left arm first, then to both arms, before it was applied to the left thigh. Great relief was obtained in the three limbs, with considerable though not complete loss of swelling. The patient was then sent to Aix to consolidate her recovery.

CASE 5. *Chronic deforming rheumatoid arthritis with effusion and rigidity, but without ankylosis.*—The patient, a married woman, aged 37 years, thin, pale, and nervous, of

[1] A paper written in July, 1905, and read before the Royal Medical and Chirurgical Society on Jan. 23rd, 1906.

[2] THE LANCET, August 13th, 1904, p. 442.

[3] Journal of Nervous and Mental Diseases, November, 1902.

[4] The Oliver-Sharpey Lectures on Recent Studies on the Tissue-Lymph Circulation, THE LANCET, April 30th (p. 1175) and May 7th (p. 1262), 1904.

the type known as irritable weakness, but viscerally sound and free from catamenial irregularities, came under treatment in June, 1905. She was then very feeble, stiff, and crippled in her knees and ankles (chiefly on the left side), and in her hands, which presented a wet palm and marked ulnar deflection. The finger-joints of the left hand were abnormally loose, those of the right showing more thickening, particularly the middle and ring fingers, the latter with a distinct float-shaped interphalangeal joint. The wrist-joints were thickened and presented soft synovitic and puffy nodular swellings, with much stiffness, tenderness, and limitation of movement. The patient's expression and attitude were those of helplessness and distress. This condition was the climax of progressive symptoms of four and a half years' duration. The first symptoms after a wetting followed by a prolonged chill in church had set in suddenly in January, 1901, with painful swelling, numbness, and stiffness of both hands, and with severe pains over the whole body which kept her in bed for 14 days. From that date onwards she was never free in some form or other from rheumatic pains or stiffness. She continued to attend to her avocations, often, however, with considerable difficulty; and the effort told severely upon her nervous system, which was naturally delicate, until she lapsed, in 1904, into a condition analogous to neurasthenia, for which she was treated in November, 1904, with hot sulphur baths and ferruginous waters without much or any benefit, and she seems to have then suffered from increased weakness and loss of flesh. The view was taken at that time and since that the arthritic condition was of neurotic derivation and under neuropathic influence. In September, 1901, the recurring painful red and shiny swellings of the right hand had been diagnosed as "rheumatic erythema." The same diagnosis was also given when she was seen in October, 1902. In the interval she had been confined, in May, 1902, of her second child, and had undergone much fatigue. Her first pregnancy, 12 years ago, had been marked by the onset of dental decay, which eventuated in the extraction of seven teeth from the upper jaw and of four molars from the lower jaw at a comparatively recent date. For the last 14 years her residence had been on high ground, where the air was bleak and the water was chalky. Her feet began to suffer during a stay in Africa in 1904, and walking became very difficult owing to the pain, stiffness, and swelling which seemed to affect the whole foot as well as the joint of the great toe. Her condition since then had oscillated without any permanent improvement. Although she was better at the end of the winter spent in the Riviera, the cold wet weather which she encountered on her return determined a severe recrudescence. The knees, particularly the left one, became swollen and very painful and the feet also swelled. The left knee had remained much swollen as a whole and fixed but particularly tender and puffy over the inner aspect of the head of the tibia. The right knee was almost normal in size and movement.

The treatment was directed, as in Case 6, to the husbanding of the general strength and to a general hygiene of the skin, muscles, and viscera, with fairly good results. After a period of rest in bed and of massage, which was of service for the general health, the treatment by interrupted circulation was applied to the right arm first as this was the worse affected. The effect upon the puffy swellings was decided and rapid. They disappeared, as in the cases of subacute rheumatism. After a few days the left arm was also submitted to daily treatment with similar results. The treatment was kept up steadily, and is still kept up, with a view to influence if possible the thickening around the bones. Not only the patient herself but all those best able to judge (including the husband after an absence of three weeks) were agreed that the size of the wrists and of the float-shaped knuckles was perceptibly reduced and the freedom of movement was greatly increased. The left knee, although getting all the advantage that general treatment, local applications, and rubbing could confer, had remained almost as greatly swollen as before, very tender, painful on attempted movement, and incapable of complete extension. The interrupted circulation treatment was at last resorted to three weeks before the date of this report and is still being applied. The progress made during that interval has been great, the patient noticing first a relief and subsequently a disappearance of the pain and tenderness, whilst to onlookers the diminution in the general swelling and the return to a more natural configuration and to greater mobility are quite obvious. As a result of these gains (within seven weeks), for which the other instalments of treatment are also doubtless, in great measure responsible, the patient has largely recovered from her depression and from her almost melancholic frame of mind and is looking forward to continued progress towards recovery.

CASE 6. *Osteo-arthritis with fixation.*—The patient, a female, aged 56 years, married, was admitted into St. George's Hospital on June 14th, 1905, in a crippled condition, not having been able to walk (or latterly to stand) without assistance for 18 months past owing to fixation of the knees in a semiflexed condition and to much limitation in the movement of the ankles, and being moreover disabled in the upper limbs by complete fixation of the right elbow and partial loss of movement in the left elbow and by complete fixation of both wrists. Her mother had suffered from rheumatism. She herself had never had rheumatic fever or any serious illness and was fairly healthy-looking for her years. The menopause had occurred at the age of 53. For the last 12 to 14 years the joints had gradually swelled and afterwards become stiff, without pain except on movement; the first joints to be affected were the metacarpo-phalangeal joint of the index finger and the metatarso-phalangeal joint of the great toe on both sides, all at one time. She had been under treatment during nearly the whole period without improvement. On examination no evidence was found of any visceral disease. There were no teeth in the upper jaw and few in the lower. The temperature was normal; the pulse-rate was 96 and the respiratory-rate was 24. The first, second, third, and fifth metacarpo-phalangeal joints of both hands were swollen, with lipping of the cartilages and grating. The proximal and middle phalanges of the fourth and fifth digits and their joints were swollen. There were ulnar deviation and much limitation of movement of the fingers. The right thumb was rigidly fixed at its proximal joint. There was much wasting of the interossei and of the muscles of both arms. Both knees were enlarged, chiefly the left, and grated on any attempt at forcible extension. The first metatarso-phalangeal joints on both sides were swollen, the ankles and tarsal regions were swollen and somewhat rigid, and there was some fibular deviation. The hips and shoulders were comparatively free within the smaller range of movement and the spine, neck, head, and jaw were quite free. The patient could thus be placed in the sitting as well as in the recumbent posture, but in both positions was otherwise helpless.

The treatment included, besides cutaneous hygiene and laxatives, full doses of the hypophosphites and of the glycerophosphates of calcium, iron, and sodium, two ounces of olive oil and half an ounce of whisky every night, a full and suitable diet, massage for the muscles and passive movements of the moveable joints, extension of the knees by weight and of the elbows by elastic traction (to facilitate which my house physician, Mr. V. Hetherington, constructed a convenient apparatus), continued flexor elastic traction for the wrists and the encouragement of active movement, which had previously been limited to a feeble waving of the fingers and to movements of the head and shoulders. The "interrupted circulation" treatment was first applied to the right arm only, as this was the worse ankylosed—namely, one sitting every other day with three "turns" of two and a half minutes' duration. But complete anæsthesia of the limb could never be obtained and the forcible manipulation of the rigid joints during the anæmia—one of the chief features of the treatment—could only be applied very gently on a small scale. Nevertheless, distinct improvement was secured after three sittings, and on June 30th slight mobility had been restored to the rigid wrist and elbow. The treatment was later applied to both arms with daily sittings, and finally to the left thigh. Previously, however, Sir William H. Bennett, after forcible treatment under an anæsthetic (on July 18th), had expressed an opinion that the left knee would never be perfectly straight. Most of the joints were moved that day with much creaking and grating and both wrists were again moved under gas on July 28th. But on both occasions the advantage gained seemed to be lost again during the several days' rest entailed by the surgical interference. Meanwhile the general strength and condition continued to improve and on August 9th the patient was able to stand and a few days later to walk as far as the lavatory. Daily systematic treatment of the arms and of the left leg was applied more regularly and efficiently after August 15th with progressive improvement. But before

that day the patient herself was conscious of the diminution in the size of the heavy wrists as well as of an increased mobility of the joints. The left knee also was now perceptibly less massive. Further progress will be reported later.

THE IMMEDIATE EFFECTS OF THE APPLICATION.

In each of the three stages of the procedure we have to keep separate account of the objective as well as of the subjective effects.

1. *The application of the ligature* (with emptied veins) gives rise to the familiar appearances well known to surgeons. The proof that the ligature has been effectively applied is the continued pallor of the limb and the failing of the superficial veins to fill again. As regards *subjective* effects, there is no pain but only a sensation of pressure at the seat of the ligature, provided no accidental pinching of the skin between turns of the tubing has occurred, and this, of course, should be carefully avoided. No immediate change in sensation is usually experienced below the ligature.

2. *The period of anæmia.*—In most cases no change is perceptible in the appearances beyond a steady increase in the pallor of the skin during the first few seconds. In rheumatoid cases the softer puffy synovial and periarticular swellings may sometimes be actually seen to have subsided after a minute or two, though some of the swelling may afterwards return when the ligature is removed.

The subjective effects vary. In some individuals there is distinct numbness rapidly passing into anæsthesia. In others the numbness and loss of sensation are delayed or the fingers or toes may retain almost unimpared sensation throughout the short period of artificial anæmia. In one particular all patients agree. The painful or tender joints are made easier. Pain and tenderness may even entirely disappear. At the same time there is a feeling of recovery of some degree of power for active movement; and when the stiffness is not due to any firm ankylosis patients will sometimes spontaneously test the joints by active movements. On the other hand, no painful or discomforting sensations have ever been complained of even during the longest sittings employed (upwards of four minutes).

3. *The removal of the ligature* is followed by a visible bright blush of the skin and nails. Never absolutely immediate this occurrence is preceded by an interval which varies in different subjects and is also apt to vary at different sittings in the same subject. This variability has its clinical importance as probably pointing to differences and variations in the function of the vaso-motor mechanisms. It is also worth mentioning as an instance among the many speculations and studies which are opened up by this method. Together with the blush there also occurs the objective symptom of increased local heat. And there may be a slight visible return in some of the soft parts of the fulness which had disappeared, as, for instance, at the back of the hands, in the interosseous spaces, and about the wrist.

Subjectively, the return of the circulation is always grateful to the patients. They usually dwell upon the pleasant warmth felt to pervade the limb. I have never heard a complaint of any painful sensation, much less of that severe pain which is often associated with the thawing of frost-bitten extremities. It is important to note that the marked relief from pain and tenderness obtained during the period of anæmia is not entirely evanescent, but that the limb remains permanently "easier."

THE CLINICAL RESULTS.

The therapeutical results obtained as regards the arthritic condition have been invariably satisfactory in the cases hitherto treated. Sometimes perceptible even to casual observers they have always been obvious to the patients themselves (see cases). No complications or untoward effects of any kind have been observed. The results may be briefly summarised as follows:

1. The recent puffy swellings in Group 1 were rapidly amenable to a few applications and in one case to a single application.

2. The inveterate puffy swelling associated with fibrous, cartilaginous, and bony thickenings was sometimes visibly influenced during the application. Its almost complete disappearance after a short series of sittings revealed the articular deformities in their sharper nodular outlines.

3. The periarticular thickenings were slower to yield but gradually diminished.

4. The thickening of cartilages and of the joint ends of bones may conceivably be found to yield to prolonged treatment. At any rate, some reduction has been observed in the diameter of the float-shaped knuckles and of the swollen wrists and knees in Case 5. But how much of this fining down may have been confined to the periosteum cannot be decided without more searching observation by means of systematic radiography.

5. The great improvement secured with the help of this method in the condition of the articular surfaces in conditions of absolute rigidity from adhesions, both as regards restoration of movement, diminution of crackling or grating, and actual reduction in the size of the joint as a whole, is evidenced in Case 6.

6. In connexion with the latter case attention may also be called to the fact that in limbs so long disused all the tissues must benefit indirectly from the restoration of movement, in addition to any direct advantage conferred upon them by the tourniquet.

GENERAL REMARKS.

The phenomena which have been described in this paper can be easily verified by any observer and they seem to furnish a sufficiently firm basis for clinical action. But their adequate explanation would be very difficult, nay, impossible, at this stage, and, moreover, it would be almost wholly a study in pure physiology. Only few words need therefore be devoted to theory and inference. We seem to be dealing, as previously suggested, essentially with the vascular mechanisms, although the nerves must not be lost sight of. Their terminal fibrils receive a large share of the peripheral vascular effects. They are also immediately concerned in any associated vaso-motor changes and in any loss or depression of sensation. Within the domain of the vascular system an instructive contrast is afforded by Bier's method of "passive congestion" which aims at overcharging the limb with venous blood and with venous plasma by closing the superficial venous outlets by a light ligature exerting but little pressure upon the arteries. The aim in "interrupted circulation" is, on the contrary, to drain the limb of as much venous blood and venous plasma as possible and to furnish it with as fresh an arterial supply as can be obtained. The central facts in Bier's method are the dusky swelling and the vascular turgor. Here the most striking appearances are the anæmia and the subsequent arterial flush; and they represent distinct and, to a certain extent, opposite events which can be broadly defined as "absorption events" and "stimulation events."

The "absorption events" are rendered manifest in the group of cases under consideration when the shrinkage which takes place in the synovial effusions or in the softer local swellings chances to be seen or, as is sometimes possible, is verified by measurement during the time of the application of the tourniquet. The inference is that, under the conditions of the experiment, the balance of circulation between the capillaries and the tissues is altered and that, like an imperfectly saturated sponge, the capillary network tends to soak up any surrounding fluid. This view seems to be justified when we watch the capillary circulation in an ulcer of the leg. We then witness a gradual emptying of the capillaries which begins soon after the tourniquet is applied and continues to increase for many seconds, until the red granulating surface is almost quite pale. What has become of the blood? Is its local withdrawal due to a redistribution of the capillary contents of the more superficial and of the deeper districts? Or is it merely due to the blood being sucked up by elastic aspiration into the partly emptied arterial and venous trunks? The slow and gradual establishment of the capillary ischæmia fits in with the view that it may be due to the relaxation of an initial extreme vaso-constrictive spasm, with partial reflux into the re-expanding arteries. And we should not forget that at the same time the empty veins must also claim their accustomed influx. A third explanation which would assume the occurrence, as in Bier's method, of an escape of some of the plasma into the tissues, seems to be inconsistent with some of the appearances as well as with the probabilities.

The "stimulation events."—These may be summed up in two words—"arterial irrigation" and "arterial movement"—which are a welcome sequel to the venous drainage of the limb. Anæmia, it is needless to point out, cannot ever be constructive: any beneficial effect from a sudden withdrawal of the nutrient blood could only be explained

indirectly through its alterative effect upon the nerves, as a nerve shock. It may, nevertheless, as previously suggested, serve a quasi-negative nutritional purpose. Not unlike forced expiration, which expels some oxygen from the alveoli, together with less useful gases, the soaking up of the plasmatic juices makes room for a freshness of supply not otherwise obtainable. Beyond this the local anæmia cannot avail to assist nutrition, for its continuance would mean "necrosis" if absolute and "atrophy" if only partial. The vitalising effect which must belong to a full supply of pure arterial blood under full pressure requires no comment, except, perhaps, a reference to the interesting fact that owing to the blood-forming properties of bone marrow this local advantage may be a gain to the general nutrition.

It would occupy too much time to discuss the effects upon the general circulation and upon the general blood pressure which may result from the removal of the tourniquet; they are probably opposite to the consequences of its application. But there is another local influence probably not devoid of importance. In some instances the suddenness of the arterial flush is well marked and suggests that each of the emptied arterioles and capillaries receives as it were a "ramming" charge. Any sudden mechanical effect of this sort is unattainable in the spontaneous variations of the circulation. The impact conveyed to the capillary walls cannot fail to be communicated to the contiguous cells as well as to the fluids in which they are bathed and this "cellular vibration" will be carried wheresoever capillaries extend, even into the inaccessible recesses of bone, in literal realisation of the poet's conception:—

" . . . . . per ima cucurrit
Ossa tremor."

In conclusion, to meet the possible objection that this method is artificial or unnatural it may be said, not altogether in metaphor, that it is a modification of the familiar treatment by massage. It has just been suggested that interrupted circulation includes an intimate micro-massage of the tissues, but it might almost be added that ordinary massage owes some of its efficacy to the fact that its performance entails a definite though very brief interruption of the circulation at each spot influenced by the pressure of the hand.

I propose to deal in a future communication with the results obtained by systematic treatment in chronic ulcers. The main purpose of this paper, as was stated at its commencement, is to call attention to *the principle of "interrupted circulation"* as a definite therapeutic agent and to the evidence as to its efficacy, and does not include any attempt to urge its adoption. Much remains to be made out as to the physiological mechanism, as to the advantages and drawbacks, and as to the scope in practical therapeutics which belong to that principle, but above all as to the most practical form under which it may eventually be applied. Upon all these matters I must reserve an opinion until further observation and the help of the experience of other workers shall have matured our conclusions.

ADDENDUM (JANUARY, 1906).

Further Report on Cases.

CASE 4.—This patient has not been seen recently, but she reports that although she has not entirely lost the articular thickening and stiffness she has maintained the advantage which had been secured during her treatment in London, and her after-treatment at Aix-les-Bains, and she is able to follow her avocations.

CASE 5.—In this case, which ceased to be under my observation soon after this paper was written, the tourniquet treatment was resumed after the patient's return home and continued at intervals; but she is unable to report any substantial improvement in the condition of the knee from this treatment or from any of the other remedies which have been resorted to. The local treatment was discontinued because she complained of increased aching supervening in the knee some hours after its application. She writes that she is still unable to walk owing to the painful swelling and stiffness of that joint.

CASE 6 (exhibited).—This patient has remained continuously under observation. There has been marked liability in damp weather to temporary aching and soreness of the joints, with increased stiffness, which have needed special relief by medication. Nevertheless, she has lost none of the ground which she had gained and has continued to improve in general health and in capacity for movement. She is no longer a cripple, walks rather stiffly, but without crutch or stick, and "she can do everything for herself." But the knees are not yet straight and the right elbow has only a limited range of movement, apparently owing to the obstruction of a bony outgrowth. Comparatively little movement has been regained in the wrists. These joints are smaller and are slowly improving, but their tendency to become fixed if strong passive movement should fail to be applied day by day has not yet been overcome. The mobility of the fingers continues to improve, greatly owing to the patient's own persevering exertions, the beneficial effect of which has doubtless had a considerable share in the benefit which she has secured during her prolonged stay in the hospital.

[As additional cases there were shown two cases of acute gonorrhœal arthritis and one of acute sprain, also a case of subacute and one of chronic rheumatoid arthritis, in which manifest benefit was derived from the application of the tourniquet.]

CONCLUDING REMARKS.

Further observation in the cases narrated and in others confirms the estimate taken in this paper of the efficacy of the method in reducing the swelling and the pain associated with the intra-articular effusion of synovial fluid or the peri-articular effusion of lymph. The immediate relief afforded in the cases of acute arthritis, whether rheumatic or gonorrhœal, and of sprain in which it has been tried, is equally striking. But in joints chronically thickened or fixed the improvement reported has not hitherto resulted in any complete cure.

Curzon-street, W.

SOME EXPERIMENTS IN HYPNOSIS.

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(With a Brief Account of a Demonstration given before the East Sussex Medico-Chirurgical Society on Dec. 19th, 1905.)

CONSIDERING hypnotism from the point of view of the unbiased inquirer it must be admitted that he is justified at first in feeling somewhat sceptical about the whole matter. The fact that the term "hypnosis" implies either sleep or some condition resembling sleep is likely to be a source of difficulty to the unpractised operator. For although the stages of hypnosis have been very variously described, yet there is a general opinion expressed that an early stage of wakefulness occurs followed by a later condition of sleep of varying depth. One reads that in the early stages the subject is fully aware of everything that is taking place about him, and, indeed, beyond some feeling of drowsiness his condition in no way differs from the normal. Even in a comparatively deep stage of hypnosis he may be quite conscious and subsequently retain a perfect recollection of all that has occurred during the experiment. Thus far it is very difficult to understand in what this "hypnosis" consists. The fact that a person feels some rigidity of his eyelids or even temporary inability to lift them when told he cannot do so may only imply that slight confusion of muscular action which can be produced in almost anybody by very suddenly telling him to put into action some particular group of muscles. Even when actual rigidity (catalepsy) of a limb results from suggestion in the early stages the inexperienced operator cannot feel confident that he is not being deceived by the willingness of his subject or even by the subject's self-deception. It was just this difficulty with which I was confronted when first attempting to produce the phenomena of hypnosis. Indeed, it is a difficulty which always appears when the matter is discussed by the inexperienced. So much so that experiments may have to be discontinued through want of confidence in one's subjects as happened in my own case some time ago. However, after a careful study of the literature dealing with hypnotism, I again determined to carry out a series of experiments which may be of interest to early students of hypnosis as exemplifying the difficulties which at once beset the path of the worker in this field of

psychology and showing how they were cleared away in one particular instance. These experiments were conducted at the East Sussex Hospital, Hastings, the patients being porters and patients of that institution. Numerous experiments were made with each subject, all observed phenomena being recorded at the time. I give notes of representative results obtained in each instance.

The method used at first was fixed gazing at a small polished disc set in the centre of a larger disc of ebony. But it was soon found that by diverting the subject's attention to one hand which I slowly moved from the height of about 18 inches from the forehead down to the level of his eyes and then rapidly past them hypnosis was as readily produced in susceptible people. Sometimes the condition could be better induced in the first instance by placing the whole hand firmly on the head and vigorously pressing the centre of the forehead with my thumb, the subject being seated in a comfortable chair with a head-rest.

Experiments with Subject 1.

H. S., a porter, formerly a soldier, aged 29 years. After several unsuccessful attempts to produce rigidity of the eyelids by pressing with the thumb on the centre of the forehead it was suddenly found that hypnosis had been induced and he was now unable to open his eyes against my command. Rigidity was then readily produced in the arms and the mouth was held firmly open and fixed when appropriate suggestions were given. These results were obtained several times and in none of the experiments did he lose consciousness, being afterwards fully aware of all that had occurred. He described an unaccountable feeling of "stiffness" and inability to move certain muscles when rigidity was suggested. This is evidently the condition of "catalepsy" described by all writers on hypnotism and can be most rapidly induced by directing the subject's attention to any part by gently stroking it. I also found that I got somewhat better results by now using Braid's method of fixed gazing. And as the hypnosis became deeper at each attempt I took careful notes of a series of prolonged experiments, as follows:—

Experiment 1.—The subject went into a light sleep but seemed to be quite out of touch with me. When roused he said that he had been dreaming about his wife and child. He readily again went into a sort of trance condition but nothing further could be done with him. He did not move out of his chair or speak when told to do so. He was awakened readily.

Experiment 2.—This was carried out in the presence of several witnesses. The man was very nervous and had some difficulty in concentrating his attention. Eventually he went to sleep and it was suggested that he was now in my sitting-room coaling the fire. He awakened when told to open his eyes. He said he had been dreaming that he was in my sitting-room *reclining in an armchair in front of the fire.*

Experiment 3.—He closed his eyes after gazing at the disc for about 60 seconds. I then told him to sleep more deeply and yet more deeply, repeating the suggestions several times. He was then allowed to rest quietly for a few minutes and was then told that when he opened his eyes he would find himself in the entrance-hall checking the admission of visitors (this formed part of his usual work). He opened his eyes when so told and on being questioned said he *was* in the hall; he seemed very confused and I could get no clear idea of his impressions. He was then given a copy of the *Royal Magazine* and told it was the patients' admission-book. He agreed that it was and I told him to look up the last entry he had made in it. He said it was the name of a patient. (I subsequently ascertained that the name which he gave was correct.) I pinched his skin and he did not flinch. He would not move about when told so to do but relapsed into a deeper sleep. I had to rouse him by shaking and shouting at him but he remained in a very confused state for about a quarter of an hour, with drooping eyelids and tendency to sleep again. He complained of great coldness of the skin. I then told him that in future he would at once awaken when I either blew in his face or clapped my hands. He had completely recovered himself by the end of half an hour.

Experiment 4.—On the next day he seemed somewhat nervous and the first attempt failed, so I told him to look steadily at my right hand and in a few seconds his eyes became heavy. I then said, "Now your eyes are heavy." He replied, "Not heavy enough yet, sir." So I let him gaze a little while longer, when he let his eyes close. This closure was evidently hastened by a pass made in front of his eyes. I then said, "Now sleep more deeply." He was allowed to rest quietly for about two minutes. It was then suggested that he would find himself in "Casualty" assisting with a case that had just been brought in. He opened his eyes at command and said that he was in the casualty room and that he could see an injured boy lying on the couch, but he would not move from his chair at suggestion that he should assist in moving the boy. He was then told to forget that scene and *analgesia* was suggested. He did not feel the prick of a sharp needle on either hand. His limbs remained fixed in any position I placed them. This is evidently the "flexibilitas cerea" of various authors. He was then given pen and paper and told to write his name and address, which he did very slowly but correctly. I next told him that he would awaken immediately at a given signal, which he did. He complained of intense surface coldness, shivering slightly, but remembered nothing of what had occurred during the experiment.

Subsequent experiments with H. S.—Space will not permit me to give full notes of all the experiments made with this man. I found him more readily amenable to suggestion at each sitting; he was quite fresh when awakened and suffered no after inconvenience. Various hallucinations were readily produced and he would go through various scenes suggested to him. It was found also possible to change his idea of time and of his position in life. On one occasion I told him he was an undertaker and he gave quite a rational explanation of how he had given up his situation as a porter and joined an undertaker in business. Post-hypnotic influence was attempted with great success as shown by the following instances: 1. On one occasion he was told that when he awakened he would go into the main corridor and turn out the electric light. It was about 9.15 P.M. When roused he *had no memory of what had been said to him* but he followed me through the main corridor where I left him. Watching him from a distance I observed him standing for some minutes looking first at the electric light and then at the clock. He was again very dazed and drowsy. I approached and asked him what the matter was and he replied that he had just had a very curious impulse to switch off the light. He said that it was somewhat extraordinary as it was not his duty ever to turn out that light, and in any case it was an absurdly early hour at which to do so. 2. During another experiment he was told that when awakened he would go into a certain ward, ask for pencil and paper and then write "God save the King." Having roused him I went away and quickly found my way to the ward in question. In a short time H. S. appeared and in a very confused way asked for pencil and paper which were provided for him by the sister in charge who expressed surprise at his request. He became more dazed and on watching him carefully I felt convinced that he had spontaneously passed into a fresh condition of hypnosis. He slowly wrote the words "God save the King" and then at once became his normal self. Taking up the paper he laughed in an amazed way and said, "Well, I seem to be getting jolly loyal." He could in no way explain why he had acted as related. 3. In another case an act was carried out some 14 hours after hypnosis as suggested, the night having intervened. In each instance the man's manner and actions led me to suppose that a fresh hypnosis spontaneously occurred at the suggested time of action, during which he unconsciously performed the act required. My experiments with this subject show that I can in him produce complete analgesia and anæsthesia and induce in him the deepest stages of somnambulism.

Experiments with Subject 2.

W. D., a porter, aged 26 years. Numerous attempts to hypnotise him have been unsuccessful. He gazes unflinchingly and for a long time at the disc without feeling the least drowsiness. By placing my hand on his forehead some stiffness of the eyelids results and on one or two occasions there was distinct difficulty when he opened them against my command. Urgent suggestion makes him somewhat sleepy but on no occasion has any rigidity or stiffness of muscles been produced and he remains, to all intents and purposes, thoroughly awake. He has seen H. S. hypnotised and is a very willing subject but does not seem able to concentrate his thoughts on the point at issue. And although he is most anxious that the looked-for result should occur yet I very much doubt whether even the earliest stage of hypnosis has been induced. Most authors say that drowsiness alone

constitutes the first stage. This being so every person who by fixing his attention becomes drowsy is in a state of hypnosis. Surely such an admission is absurd. Certainly for experimental purposes it seems better to place such a case in the category of those who are *uninfluenced* by hypnotic methods, at least within a reasonable time or number of experiments.

Experiments with Subject 3.

C. B., a youth, aged 18 years, convalescent after operation for acute appendicitis and in a good state of health. As he appeared rather below than above the ordinary standard of intelligence I anticipated some difficulty in getting him to concentrate his thoughts.

Experiment 1.—Asked if he would consent to an experiment in which he would be sent to sleep (the term "hypnotism" was not mentioned) he expressed his willingness. He was placed in a chair and told to look at the disc and that he would soon "go to sleep." After a minute or so he was told to close his eyes. I then placed my hand on his forehead and told him he could not open his eyes. *He succeeded in opening them* but with some difficulty. At the second and third attempts the heaviness of his lids increased so that he was now unable to open his eyes. He was then told to *sleep deeply*. He rapidly passed into a condition of *great drowsiness*, not quite resembling a deep sleep, being quite unconscious of his surroundings and when roused was very confused, I told him to rest quietly and suggested that he was back in the ward from which he came and assisting at the supper-table. He would not move from his chair when told but slept quietly. On being roused he said that he had "dreamt" he was in the ward watching one of the nurses playing the harmonium. This is *what he had been doing before I sent for him*, so that my suggestions had been unsuccessful. I again hypnotised him and he slept very deeply. The previous suggestion was repeated loudly two or three times. After about two minutes he stretched out his hands as if groping in the dark for something. On being questioned, his eyes still shut, he said that he was looking for his cocoa. But I could not get him to rise from his chair to look for it. When undisturbed he relapsed into still deeper sleep. Then it was suggested that when he went back to the ward he should at once go up to a certain patient and shake hands with him. As will be seen, this suggestion was successful. I then tried to rouse him by telling him to awake, clapping my hands, and by blowing on his face, but I had great difficulty in awaking him. However, I got him into a more or less wakeful state and leading him by the arm took him back to the ward. A staircase was negotiated with some difficulty, as he stumbled frequently. He remained very dazed but brightened when he saw his friends the other patients. He walked at once to the patient already indicated and tried to shake hands with him, asking him how he felt. This was scarcely a *post-hypnotic* result, as he seemed to be still in a condition of hypnosis and straightway fell asleep on a sofa by the patient's side. I roused him and told him to go to bed. He obeyed mechanically and in a very dazed manner. It was only about 6 o'clock and as it seemed as if he would miss his usual supper I ordered him some warm milk. He took the mug and drank in a mechanical way. He slept soundly for about five hours. At 11 P.M. I roused him and he awakened quite naturally, being surprised to find himself in bed. Next morning I questioned him and found that he had *no recollection of going upstairs to the ward*. However, he had a dim recollection of seeing his friends on the sofa and of falling asleep there, but did not remember getting into bed, felt quite cheerful, and thought the whole thing a great joke.

Experiment 2.—On the next day he was hypnotised at about 6.30 P.M. and he immediately sank into a deep sleep. I was unable to make him respond to suggestion and when roused he appeared to recognise his surroundings with difficulty. Although I had previously told him that he would awake at a given signal he *did not now respond*. Finding myself unable to wake him or do anything with him it seemed better to get him back to bed. This was accomplished with difficulty, as he wanted to sleep all the way and could only be roused enough to walk with support. The faradic current applied to his hands made him start and utter an exclamation but immediately after he fell asleep again. He failed to respond to a suggestion I had given him as to his actions on entering the ward. He had to be put to bed, and slept soundly, waking naturally in the early morning hours, when he asked for something to drink. Next morning he had a confused recollection of the battery, of going upstairs, and of being put to bed. This experiment is extremely interesting, as it produced a condition described, and afterwards denied, by Bernheim, a condition which is described by the following translation taken from Dr. J. M. Bramwell's "Hypnotism": "Others (i.e., somnambules), on the contrary, fall into a deep, heavy sleep and remember absolutely nothing on waking. While they are asleep they can be questioned in vain, tormented with questions, yet they remain inert." Dr. Bramwell says that he has never observed this condition; but it is reproduced in this subject every time he is hypnotised unless the most urgent suggestions to the contrary are made.

Experiment 3.—The following day at 8 P.M. he was rapidly hypnotised by Braid's method, and he passed into a condition of deep sleep, although I had tried to impress him with the idea that a very deep sleep was not required by me. However, he was much more amenable to suggestion than on previous occasions and responded readily to various ideas—e.g., 1. That he was at home. He said he was in his brother's shop helping with the delivery of groceries (he is accustomed to live with a brother who is a grocer). 2. That he should shout "God save the King" several times. After repeating the words myself several times he began to imitate me. When pricked sharply he shuddered and pulled his hand away, but did not reply when asked if he felt pain. He stood up when told to, but with reluctance; he would *not* move about or dance at suggestion. He was unable to get back to the ward without help, and again passed into an absolutely inert stage, having to be undressed and put to bed as on the previous evening. After about four hours I again tried to rouse him, when he immediately sat up in bed. He said he knew that he was in bed in the ward. He then went to sleep in a sitting posture which was maintained for several hours. Next morning he said that he remembered nothing of the experiment beyond the fact that he went to sleep in a chair and awoke to find himself sitting up in bed. He seemed perfectly well and as arrangements had been made for his discharge that day I was obliged to let him go home, telling him to come and see me in a few days' time if he could.

Experiment 4.—Three days after his discharge he came to the hospital again. He was in an excellent state of health and was very pleased to visit his friends in the wards. He had experienced no unpleasant consequences from the previous experiments. It was now about 3 P.M. and as he had a railway journey of some ten miles before he could get home I was particularly anxious not to produce such a condition of somnambulism as would necessitate his staying in the hospital many hours. So I carefully explained to him that on this occasion I did not require a *deep sleep* but rather that he should merely forget his surroundings for the time being and also that he was to awake immediately at a given signal and would then feel quite fresh and wakeful. Having repeated these instructions carefully several times I proceeded to hypnotise him. In a few seconds he closed his eyes when told and became apparently lightly asleep. He was now very responsive and the following suggestions were made, which I tabulate with results: 1. Analgesia—did not move when firmly pinched. 2. Rigidity—successful. 3. That he was in Ward II.—did not answer my questions. 4. That he could see a cat—unsuccessful. 5. That he was at home—successful. I had suggested "shop," but he said that he was in his brother's "office" making up the books. He saw his brother and shook hands with him at suggestion. The experiment had now lasted about 20 minutes so I gave the pre-arranged signal and he awoke *immediately*. Heaviness of the eyelids only lasted a very short time. In a few minutes he felt quite fresh and was ready to join some friends at tea before going home. I have not seen him since as he then went to stay in another part of the country. But he gave me his permanent address and said that he was quite willing to be hypnotised whenever I found an opportunity. It seems that I could have avoided the earlier difficulties I mentioned with this subject by the appropriate suggestions as to the depth of sleep and signal to awaken which were successful in this last experiment.

Experiments with Subject 4

G. P., a boy, aged 13 years; healthy. By pressing on his forehead I almost immediately rendered him unable to open his eyes. I then told him to look at my hand and to sleep when I passed my hand in front of his face. This he did.

He responded readily to various suggestions, mostly visual hallucinations; analgesia and catalepsy were also produced. He awakened immediately when so ordered. He said that he remembered a good deal of what had occurred, such as seeing a cat and stroking it, "feeling stiff all over," and so on, but he felt unable to offer any resistance, so that my suggestions that he should *not* subsequently remember anything of the experiment had been unsuccessful. However, as this was the first attempt made to hypnotise this subject I considered the experiment quite satisfactory. On several subsequent occasions I made experiments with him and found myself able to obtain a deep yet alert stage of somnambulism with sometimes complete amnesia on waking.

Experiments with Subject 5.

C. B., a man, aged 25 years; slightly deaf. I explained the nature of the experiment and he expressed himself as quite willing to assist. After numerous attempts, however, I was unable to convince myself that any degree of hypnosis had been produced. Drowsiness occurred as with my second subject (W. D.), but as explained when describing results obtained with him it does not seem reasonable to place such a case in the category of susceptible people.

Experiments with Subject 6.

A. H., a railway porter, aged 19 years.

Experiment 1.—I told him to hold the hypnoscope in front of him with both hands and to stare at the bright disc until he became drowsy. After about five minutes he became very drowsy and by suggestion I easily produced fixation of the eyelids and rigidity of one arm. He awakened readily and had complete memory of all that had occurred.

Experiment 2.—He was rapidly hypnotised and I was now able to produce an early stage of somnambulism. He responded to various suggestions; analgesia was produced. It was further suggested that after awakening he should have "pins and needles" in his right hand. I was unable to produce a hallucination of smell. He awakened readily and told me that he had "pins and needles in his right hand." He remembered a good deal of what had occurred.

Experiment 3.—A still deeper stage of somnambulism with visual hallucinations was produced. Afterwards the subject described these as occurring like a picture in a distant part of the room, himself remaining aware of his surroundings whilst his eyes were open. This is quite a different phenomenon from that observed with H. S., C. B., and G. P., who imagined themselves actually *in the scenes* suggested. Possibly on another occasion I might have produced deeper stages of hypnosis but I had no further opportunity of testing this man. An attempt at post-hypnotic influence extending to the next day failed completely. I should say that he had been complaining of heaviness of his eyes following the removal of a facial sebaceous cyst under cocaine, and thinking this to be of the nature of an auto-suggested neurosis I tried to remove the feeling by hypnosis; that is how I came to experiment with him. Each time I gave appropriate suggestions with reference to his eyes and he afterwards said that the heavy feeling no longer existed. It certainly seems as if the false idea in his mind had been removed by the suggestions.

It will be seen that in a series of six male subjects deep hypnosis was produced in three, a moderately deep stage in one, and two appeared to be unaffected. One of these latter was the only subject whose health was at all enfeebled, he being under treatment for extensive tuberculous adenitis. The rest may be said to have been quite healthy. H. S. and W. G. were porters at the hospital. C. B. was quite convalescent after an appendicectomy. G. P. had recently had some adenoids removed. A. H. was attending the casualty department after removal of two small sebaceous cysts. In all four of the susceptible subjects analgesia was produced and it is certain that operations of considerable extent could at any time be performed upon either of them whilst in the hypnotic state without any need of an administered anæsthetic. And as in each I was able to produce pain by suggestion, I take it that certain forms of headache or neuralgia could be relieved by a similar process.

Applying this method by my advice to the relief of pain whilst setting a fractured femur in a boy about eight years old, a medical friend was recently able to produce analgesia and muscular relaxation sufficiently to enable him to manipulate the injured limb extensively without any discomfort to the patient. I assisted at the operation and was quite satisfied that hypnosis had been produced. A similar attempt since made by myself in the case of a man with a fractured tibia failed completely. Unfortunately, there seems to be no means of gauging the susceptibility of a patient beforehand and consequently at present one cannot have much confidence that analgesia will be produced in any given case. In my series of healthy male subjects nothing was observed which could have decided as to which of them would be unaffected. As to the after-effects of my experiments in no case did I notice anything which would lead me to suppose that any injurious mental or physical results were to be apprehended.

DEMONSTRATION BEFORE THE EAST SUSSEX MEDICO-CHIRURGICAL SOCIETY.

Having been invited to give a demonstration of hypnotic phenomena before the above-named society I decided to make use of the man H. S., but he was so nervous at the idea of being hypnotised in public that I was somewhat doubtful as to my ability to influence him in the presence of the meeting, which was held at the East Sussex Hospital on Dec. 19th last. However, after explaining the nature of my recent experiments and, further, my doubts as to the possibility of repeating them under present conditions, I sent for my subject. Having seated him in an arm-chair I gave him a short time in which to compose himself and then told him to look at my hand which was held a few inches above his eyes. After several seconds he became drowsy and on my making a downward pass to close his eyes he fell into a deep sleep which was increased by further suggestion. That this was a hypnotic condition was shown by the failure of several gentlemen to wake him, their attempts being made at my request. Cataleptic rigidity was then suggested and tested by several members of the society.

The next experiment was of greater interest to the meeting, being the production of analgesia and anæsthesia. The man was roused sufficiently to enable him to answer questions without coming out of the hypnotic state, and the altered appreciation of painful and tactile stimuli was thoroughly examined. In addition I suggested anæsthesia of one hand and hyperæsthesia of the other with convincing results. Various hallucinations were then produced, for the most part indicated in the first instance by various members, such as the *presence of a caged lion*—he evidenced great objection to going near the cage, asserting that the brute was both large and furious; *that he had just met a friend*—he shook hands, carried on a conversation, and eventually said good-bye in quite a natural manner. On being questioned he mentioned some name as that of his friend and told us where she lived. He had apparently imagined he heard his friend's voice during this hallucination. Other suggestions were *that he was smoking*, had been *bitten by a gnat*, *was sliding on a frozen pond*, and so on, to all of which his behaviour indicated a response. I was then asked to produce some simple reflex by suggestion so I told him that something was tickling his nose and that he would sneeze directly. Having made a wry face he sneezed once quite naturally. I then produced a very deep stage of hypnosis and endeavoured to get this man to go through some scene of his past life and as he had served in the recent South African campaign I suggested that he should open his eyes and find himself in action against the Boers. He immediately began to act in a remarkable manner. Apparently he was at once seeking cover from the enemy and executed movements as if he were using a rifle, repeatedly raising and ducking his head behind some imaginary protection and occasionally making some remark to his comrades in arms. During this experiment I found it impossible to make him conscious of my presence and it was only by vigorously shouting at him that I could elicit any reply to questions. At times he seemed to think that he was being addressed by some officer, as he would then rise to his feet and salute. His actions were only stopped by placing my hand over his eyes and telling him to sleep, which he did almost immediately, having to be assisted back to his chair.

The next experiment concerned what is usually known as post-hypnotic suggestion. This term is obviously erroneous, as the suggestions are given during hypnosis and it is the *response* which occurs afterwards. It seems, therefore, that it would be better to speak of post-hypnotic *influence* rather than *suggestion* in this instance. Several actions were suggested to H. S. which he carried out when awakened. As in previous experiments of this kind he apparently fell into a transient condition of re-hypnosis whilst performing these acts—that is, judging by the mechanical and somewhat dazed way in which he carried them out. During the

whole of the preceding experiments he was quite unconscious and *had no subsequent recollection of anything* that had occurred whilst he was in the hypnotic state, this condition having lasted about 40 minutes.

At the conclusion I was asked again to hypnotise him, which was readily done. It was then suggested by the chairman that as this man had allowed himself to be thus made use of without hope or idea of reward he should be made to take a collection for himself whilst in a condition of hypnosis. This was done and I told him that he had been given a number of counters which he was to put in his pocket. When awakened he had no idea of what had happened and later had an agreeable surprise when told to examine his pockets. The meeting terminated with a discussion of the phenomena observed.

THE ACID EXTRACT OF THE DUODENAL MUCOUS MEMBRANE AS A REMEDY IN DIABETES MELLITUS.

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Dr. R. T. Williamson,[1] writing in 1898, closes his very full account of the treatment of diabetes with the following words: "It will be evident that what is required to enable us to combat the disease successfully is either: (1) some new form of carbohydrate which diabetic patients can assimilate and which can take the place of sugar and starch in the diet; or (2) some internal remedy which will prevent the accumulation of sugar in the blood, a remedy which will enable the system to dispose of the carbohydrates in the normal manner." So far as the first of these requirements is concerned we are in the same position to-day but I am not so sure as to the second.

There is no reasonable doubt that the pancreas plays an important, if not indispensable, part in the assimilation of the carbohydrates. In many cases of diabetes anatomical changes have been found in the pancreas; in others none have been found. However, as was natural, attempts have been made to treat cases with pancreatic extracts. I think I may safely say that they have proved uniformly unsuccessful. We must not forget that the action of a gland may be limited to its living state and that some of the specific changes it then produces cannot be brought about by an extract of the organ. This may be illustrated by the case of the kidney—the living organ can produce the synthesis of hippuric acid from glycocoll and benzoic acid; the dead organ or a renal extract fails completely to do so. We may have in the case of the pancreas a similar position, the *living* organ has a powerful share in the assimilation of carbohydrates. It has been shown that extracts of pancreas have no glycolytic action. I suggest that it is a function of the living organ, in which case the negative results of pancreatic feeding are explicable.

Now, whilst talking over the subject of diabetes in January, 1905, Professor B. Moore suggested to me that the acid extract of the duodenal mucous membrane might prove of service. I accepted the suggestion readily, for it seemed to me that it afforded some hope of stimulating the living organ. The basis of the suggestion was, of course, the well-known work of Bayliss and Starling who have shown that the contact of hydrochloric acid with the epithelial cells of the duodenum causes in them the production of a body which is absorbed by the blood stream and carried to the pancreas, there to act as a specific stimulus to secretion. We do not know whether the internal secretion of the pancreas is derived from special cells or from the ordinary cells of the organ. We do know that an active pancreas pours a larger amount of lymph into the efferent vessels and this may include an increase in the internal secretion. Without entering into the battlefield of warring opinions as to the exact methods of their action it may be said that the duodenal mucous membrane, the pancreas, the liver, and the muscles are all concerned in carbohydrate assimilation. It is difficult in any given case of diabetes to determine which of them may be at fault; moreover they are all under the control of the nervous system, either directly or through the intervention of the blood-vessels. It is impossible therefore to say in any particular case whether the acid extract will prove useful or whether combinations of extracts of these organs may be necessary.

Gilbert and Carnot[2] have had some results in man with liver extract and O. Cohnheim[3] *in vitro* has found marked glycolytic action exerted by a mixture of pancreas and muscle extracts. This, however, has been denied by Claus and Embden.[4]

I shall not enter into further detail on the scientific side of the question, nor do I propose to give full details of my cases. The whole matter is distinctly tentative and I bring it forward in order that a larger number of cases may be tried.

CASE 1.—My first case was that of a man, aged 25 years, who was admitted into my men's ward at the Royal Infirmary on Sept. 14th, 1904. It was a typical case; there were wasting, dry skin, polyuria, excessive thirst, and weakness. The urine contained on an average 3000 grains of sugar and was in quantity from 110 to 120 ounces; it contained acetone and diacetic acid. Codeia was given with no effect. On Nov. 23rd antipyrin was given and in January, 1905, the sugar had fallen to 1000 grains. In January the acid extract of duodenal mucous membrane was given and by the end of May the urine had become quite free from sugar and the polyuria had ceased. The man's sense of well-being was so great that he stopped coming for his medicine. I may say that he had left the hospital at his own request at the end of January. He remained well until August when wasting again set in and in October I again admitted him to the hospital and he died on Dec. 17th from tuberculous caseous pneumonia.

CASE 2.—Meanwhile I had seen, in consultation with Dr. W. Macfie Campbell and Dr. J. Graham Martin, a boy, aged seven years. He had never been a strong lad and in June, 1905, his mother noticed that he was wasting, was paler, languid, always thirsty, and had a huge appetite. Dr. Martin found the urine to measure 70 ounces and to contain 8·3 per cent. sugar = 2685 grains. On July 5th the patient was dieted and put on antipyrin and the acid extract. With slight fluctuations a steady diminution in the polyuria and the glycosuria followed until on August 30th the report of the urine examination was: "Quantity 1180 cubic centimetres; no sugar." Early in October we began to drop the antipyrin day by day, then the acid extract, until on Dec. 2nd the patient was taking no drugs. He is still sugar-free, has gained weight, and is a better colour. I may say that he is still on a fairly strict diet but we propose at the end of January, if the urine remains sugar-free, to see what his carbohydrate limit is.

CASE 3.—The third case that I wish to mention is under the care of Dr. J. Matthews of Blundellsands and as the treatment with acid extract was adopted from hearing of my cases he has given me permission to report it. The patient, a girl, aged nine years, was found to have glycosuria in November, 1905. The urine was of specific gravity 1040 and the sugar was 10 per cent. At first a modified diet with antipyrin and alkalies was given and the sugar fell to 3 per cent. and was steady at this level for three examinations (six days). Acid extract was then given and on Dec. 23rd the urine had become sugar-free. I believe this patient relapsed without any very definite reason but the sugar is again lessening in amount.

I have tried the acid extract in two other cases with a negative result but the duration of treatment was so short that they afford no evidence one way or the other. Fuller details of the cases will be found in the forthcoming number of the new *Bio-Chemical Journal*, edited by Professor B. Moore and Mr. E. Whitley, but I must acknowledge my indebtedness to Mr. Edie for the trouble he has taken in the regular examination of the urine in Cases 2 and 3 and to Dr. Campbell, Dr. Martin, and Dr. Matthews for their kindness in allowing me to report their cases. I do not wish to draw any far-reaching conclusions from these cases but I certainly think that they deserve attention and afford ground for a more extended trial of the extract.

Liverpool.

[1] Williamson: Diabetes Mellitus, 1898.

[2] Gilbert and Carnot: L'Opothérapie.

[3] O. Cohnheim: Zeitschrift für Physiologische Chemie, Band xxxix., p. 336.

[4] Claus and Embden: Hofmeister's Beiträge, Band vi., Heft 5.

A NEW AND EASY PROCESS OF TRIPLE STAINING FOR CYTOLOGICAL AND HISTOLOGICAL PURPOSES.

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(From the Cancer Research Laboratories of the Middlesex Hospital.)

IN the course of an investigation upon the nuclear changes characterising certain new growths I was led into various experimental methods of tissue staining in the hope that I might render my work more easy by devising some simple and rapid way by which a sharp colour differentiation between the various constituents of the nucleus, cytoplasm, and intercellular tissues might be obtained. This object I have attained by a process founded on the "triple stain" of Flemming. An account of it has already appeared in Vol. VI. of the Archives of the Middlesex Hospital and I have since that publication further improved upon it. Flemming's "triple stain" is a method well known to workers in the field of cytology. Its original object was to combine in the tissues the stains saffranin, gentian violet, and orange G. in such a way that the chromatic substance of the nucleus should be stained by the gentian violet, the cytoplasm by saffranin, and the intercellular substances by the orange. This at least appears to have been the aim of its originator, but subsequent workers have not attained this ideal and it has fallen into disrepute amongst certain of them. Thus Bolles-Lee describes it as a "clumsy and uncertain method." It is, however, true that other authorities still warmly commend it, although they do not pretend to realise the ideal of a "*triple stain*" in the sense of giving three distinct colours. Moreover, even when used as a *double stain* the method is lengthy and uncertain. By the following method a true triple stain can be attained with ease, rapidity, and certainty.

Technique.—1. Fix small pieces of the tissue in acetic-alcohol.[1] (The fixatives of Hermann and Flemming may be used if preferred. The older and inferior fixatives such as alcohol, &c., are useless as regards the fine details for which this process was devised, whilst formalin renders it impossible of performance.) 2. Embed, cut, and mount in the usual manner. 3. Stain for one hour in a saturated watery solution of saffranin. 4. Wash in water. 5. Stain for a quarter of an hour in a saturated watery solution of methyl violet. 6. Wash in water *and wipe the slide dry except that part occupied by the section.* 7. Have ready in a drop-bottle the following solution: to 20 cubic centimetres of acetone add *drop by drop* a saturated watery solution of orange G. until the flocculent precipitate which slowly appears on shaking is just dissolved in excess of the watery solution; then filter. 8. Flood the slide with this solution. A cloud of colour immediately comes out which obscures the view of the section. 9. Pour this off on to blotting-paper and flood again with the same solution. The colour cloud being much fainter the section can be watched. 10. When the section has attained a *rather faint* brownish-pink colour, pour off the orange-acetone solution. 11. Wash in acetone for a few seconds. (*This should be contained in a small glass jar. Acetone being very volatile, care should be taken that the section does not dry.*) 12. Wash in xylol. 13. Transfer to low-power microscope and see if the proper result has been attained. 14. Wash in two fresh changes of xylol. 15. Mount in xylol-balsam.

Result.—All chromatic elements, nucleoli, and certain nuclei, such as those of polymorphonuclear leucocytes, stain a rich violet, chromosomes standing out with peculiar distinctness. The spindle fibres of nuclear mitosis stain a faint pink. The cytoplasm stains a rose pink. The intercellular tissue stains a pale yellow. These effects are best seen if the slide be examined through a deep blue screen.

Notes.—A. The method appears to depend upon a selective action of the orange-acetone on the saffranin and methyl violet. It displaces both of them from the tissues but removes the saffranin most rapidly from the chromatic elements, whilst it displaces the methyl violet most rapidly from the cytoplasm. B. The most important factor in the process is the orange-acetone solution. If this is allowed to act too long the whole section is stained a uniform yellow. If it has not acted long enough the section is blotchy from methyl violet remaining in the cytoplasmic structures and has a distinct violet tint. If the colours are discharged too rapidly the orange acetone is too strong and should be diluted with acetone. The reagent deteriorates after a time. C. The duration of the exposures to the saffranin and methyl violet may be varied respectively according to the particular tissue under preparation. The periods I have given represent a fair average. If the saffranin has acted too long relatively to the methyl violet all the latter stain will be displaced, the saffranin alone remaining in the chromatic elements, a want of distinctness in these structures resulting. If the methyl violet has acted too long the saffranin is discharged from the cytoplasm before the methyl violet and the preparation is blotchy and indistinct. A very slight degree of practice is sufficient to overcome these difficulties. D. If on examination with the low-power microscope (see above) it is found that not sufficient colour has been discharged the treatment with orange-acetone should be repeated. If, however, too much colour has been discharged the specimen had better be taken back from xylol, through acetone, to water, and the process begun over again.

Devonshire-street, W.

[1] Pure glacial acetic acid 1 part and absolute alcohol 2 parts. Immerse small pieces of tissue not exceeding a 3 m.m. cube from 5 to 15 minutes, according to size. Dehydrate rapidly in several changes of absolute alcohol. It is of great importance that the glacial acetic acid should be pure (99 to 100 per cent., freezing point 15° C.) and that the alcohol should be absolute.

THE IMPORTANCE OF A STRICTLY LIMITED LACTATION.

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FOR everyone through whose hands are constantly passing cases of illness in childhood and infancy the question of infant feeding is a matter of primary importance and, consequently, the condition of health of the mother is a subject of the greatest importance and interest. In the study of this question it seemed to me that some interesting light might be thrown on the very complicated subject of the relationship between mother, fœtus, and suckling by observations on the concurrence of pregnancy and menstruation with lactation and as a consequence of the results obtained I am led to advance this plea for a more strict limitation of the length of lactation.

My observations were conducted in the case of 100 mothers from whom there were born 405 children (five cases of twins), and of these 400 deliveries there were 374 from which 376 infants survived at least two months. In 259 of these 374 deliveries (69 per cent.) the children were nursed on the breast, wholly or partially, for at least two months; and, therefore, in 259 cases there was a possibility of pregnancy or menstruation occurring during lactation. Of these cases the average duration of suckling was ten months. In six cases the condition as regards the menses was not ascertained, and of the 253 lactations in which this point was determined, in 153 (60 per cent.) there was complete amenorrhœa and in 100 (40 per cent.) menstruation occurred. Of these 100 occasions in which menstruation occurred during lactation the date of the return of menstruation was:—

During the first two months	after birth in	27	cases.
,,	third	month	,,	,,	7	,,
,,	fourth	,,	,,	,,	4	,,
,,	fifth	,,	,,	,,	11	,,
,,	sixth	,,	,,	,,	15	,,
,,	seventh	,,	,,	,,	9	,,
,,	eighth	,,	,,	,,	12	,,
,,	ninth	,,	,,	,,	7	,,
,,	tenth	,,	,,	,,	1	,,
,,	eleventh	,,	,,	,,	5	,,
,,	twelfth	,,	,,	,,	1	,,
,,	thirteenth	,,	,,	,,	1	,,

From which it is seen that in more than one-fourth, or 27 per cent., of these cases menstruation returned within two months of delivery, and in 92 per cent. of cases within nine months, figures closely agreeing with those of Mayer who found that in 685 lactations menstruation returned in 25 per cent. of cases within the first six weeks after delivery.

Of the 253 cases of lactation the position of the children in the family and the condition as to amenorrhœa or menstruation during the lactation, with the average duration of lactation for the children of each position, were as follows (Table I.):—

TABLE I.

Position of child.	Number of cases.	Amenorrhœa.	Menstruation.	Average duration of lactation.
1st	71	40	31 (44 %)	9 months.
2nd	54	28	26 (48 %)	10 ,,
3rd	44	26	18 (40 %)	10½ ,,
4th	24	15	9 (38 %)	11½ ,,
5th	22	14	8 (36 %)	9½ ,,
6th	15	11	4 (27 %)	9½ ,,
7th	8	7	1 (13 %)	12 ,,
8th	7	5	2 (29 %)	9 ,,
9th	4	3	1 (25 %)	9½ ,,
10th	1	1	0	12 ,,
11th	1	1	0	12 ,,
12th	1	1	0	12 ,,
13th	—	—	—	—
14th	1	1	0	12 months.

From these figures it would appear that menstruation during lactation is decidedly commoner with the early children than with the later. This, however, might be due to the fact that the earlier children were longer on the breast, but a glance at the last column of the foregoing table shows that with no child is the average duration of lactation shorter than with the first, and, consequently, that the increased frequency of the return of menstruation during lactation in the earlier lactations is not due to the greater length of the lactation period. As regards the date of the return of menstruation in the cases of the different children in the family, Table II. gives these dates and also the percentage frequency of the return under two months after delivery and at the sixth month:—

TABLE II.

Position of child.	Number of cases.	Return of menstruation.												Under 2 months.	At 6th month.
		Within 2nd month.	3rd month.	4th month.	5th month.	6th month.	7th month.	8th month.	9th month.	10th month.	11th month.	12th month.	13th month.		
														%	%
1st	31	11	4	2	2	1	5	1	1	1	2	1	—	36	65
2nd	26	5	2	1	3	3	2	6	3	—	1	—	—	19	53
3rd	18	5	—	1	1	3	1	4	2	—	1	—	—	28	56
4th	9	2	—	—	2	3	—	1	—	—	—	—	1	22	89
5th	8	3	—	—	2	1	1	—	1	—	—	—	—	38	75
6th	4	—	—	—	1	2	—	—	—	—	1	—	—	0	75
7th	1	—	—	—	—	1	—	—	—	—	—	—	—	0	100
8th	2	—	1	—	—	1	—	—	—	—	—	—	—	0	100
9th	1	1	—	—	—	—	—	—	—	—	—	—	—	100	100

From the above it is seen that in a considerably greater proportion of cases does menstruation return within six

TABLE III.—SHOWING THE DURATION OF OVERLAPPING OF PREGNANCY AND LACTATION.

No.	Length of lactation.	Date of conception after delivery.	Duration of overlapping of pregnancy and lactation.	Position in family of fœtus conceived.	Presence (+) or absence (−) of menstruation before conception.	Age of mother at date of conception.	Condition of children at date of examination.		Number of children in family.
							Suckling.	Fœtus.	
1	11 months.	8 months.	3 months.	Second.	M −	21¼ years.	Alive and well.	Alive and well.	4
2	12 ,,	7 ,,	5 ,,	,,	M −	29½ ,,	,, ,,	Died, aged 5 months.	11
3	15 ,,	10 ,,	5 ,,	,,	M +	25 ,,	,, ,,	Phthisical.	8 Same family.
4	12 ,,	8 ,,	4 ,,	Third.	M +	26½ ,,	Phthisical.	Delicate.	8 Same family.
5	12 ,,	9 ,,	3 ,,	,,	M +	21½ ,,	Alive and well.	Stillborn.	3
6	9 ,,	8 ,,	1 ,,	Fourth.	M +	28 ,,	,, ,,	Miscarriage.	9
7	24 ,,	18 ,,	6 ,,	Third.	M −	30 ,,	Died, aged 2½ years.	Alive and well.	10 Same family.
8	24 ,,	18 ,,	6 ,,	Fourth.	M −	32 ,,	Alive and well.	,, ,,	10 Same family.
9	11 ,,	10 ,,	1 ,,	Second.	M +	24½ ,,	,, ,,	,, ,,	3
10	13 ,,	11 ,,	2 ,,	,,	M −	20 ,,	,, ,,	Died, aged 10 months.	4
11	13 ,,	11 ,,	2 ,,	,,	M +	23 ,,	,, ,,	Alive and well.	6
12	11 ,,	6 ,,	5 ,,	,,	M −	31 ,,	,, ,,	,, ,,	9 Same family.
13	12 ,,	11 ,,	1 ,,	Twins, fourth and fifth.	M +	30½ ,,	,, ,,	Premature twins; died.	9 Same family.
14	12 ,,	8 ,,	4 ,,	Third.	M −	24 ,,	,, ,,	Alive and well.	8
15	15 ,,	10 ,,	5 ,,	Second.	M −	28½ ,,	,, ,,	,, ,,	3
16	7 ,,	6 ,,	1 ,,	,,	M +	23 ,,	,, ,,	,, ,,	8 Same family.
17	7 ,,	6 ,,	1 ,,	Third.	M +	24½ ,,	,, ,,	,, ,,	8 Same family.
18	10 ,,	9 ,,	1 ,,	,,	M −	22½ ,,	,, ,,	Died, aged 6 months.	14
19	18 ,,	16 ,,	2 ,,	Fourth.	M +	25 ,,	Delicate.	Miscarriage.	5
20	6 ,,	4 ,,	2 ,,	Second.	M +	20 ,,	Alive and well.	,,	5 Same family.
21	9 ,,	8 ,,	1 ,,	Twins, fourth and fifth.	M +	21½ ,,	,, ,,	Twins—one died at birth; the other very delicate.	5 Same family.
22	15 ,,	6 ,,	9 ,,	Third	M +	23½ ,,	Delicate.	Delicate.	9
23	9 ,,	5 ,,	4 ,,	Second.	M +	20 ,,	,,	Stillborn.	5
24	13 ,,	11 ,,	2 ,,	Fourth.	M +	35 ,,	,,	Delicate.	6
25	13 ,,	10 ,,	3 ,,	,,	M −	32 ,,	Alive and well.	,,	5
26	10 ,,	9 ,,	1 ,,	Second.	M −	23 ,,	,, ,,	Alive and well.	12
27	14 ,,	12 ,,	2 ,,	Third.	M +	25½ ,,	,, ,,	,, ,,	8
28	9 ,,	7 ,,	2 ,,	Second.	M −	23 ,,	Died, aged 18 months.	,, ,,	10
29	11 ,,	8 ,,	3 ,,	,,	M +	24 ,,	Alive and well.	Delicate.	5

months in the later children than in the earlier children, and as the average lactation period of the later children was as long as that of the earlier children, it appears that when menstruation occurs in later lactations it occurs early or not at all. Of the 100 mothers examined, 87 suckled a child for two months on at least one occasion, and of these 87 who suckled once or oftener 47 experienced the return of menstruation during lactation; while of the 47, in 26 cases it occurred with every lactation. Menstruation during lactation was thus found to occur in nearly 1 in 2 of the subjects examined and in the great majority of the cases the return of the menses took place within nine months of delivery. That in no single instance was the suckling seriously affected is an important point, and the fact that the return of menstruation is commoner during the earlier than the later lactations would seem to indicate that its return is accelerated in the case of the younger and stronger mothers. This condition, therefore, by no means necessarily serves as a contra-indication for the continuation of suckling, and a French author indeed—M. Gillet—goes so far as to recommend as a wet-nurse the woman who menstruates regularly during lactation, as this he considers to be a sign of robust health.

The condition of pregnancy during lactation is, however, a very different matter. Of my 259 cases where this was a possibility it occurred 29 times, and the following table summarises these cases. Here it will be seen that of the 100 mothers in 24 per cent. pregnancy occurred during lactation and in 29 out of 374 conceptions—i.e., 8 per cent. of conceptions, or in 11 per cent. of cases where the infant was reared for at least two months on the breast. Thus in 24 per cent., or nearly 1 in 4 of the mothers, there occurred at some period an overlapping of pregnancy and lactation, and in five cases this occurred twice, and this occurrence took place in 11 per cent. of the lactations.

From Table III. it is seen that the duration of the overlapping of pregnancy and lactation was:—

In 8 cases	... ...	1 month	
,, 7	,, ...	2 months	
,, 4	,, ...	3	,,
,, 3	,, ...	4	,,
In 4 cases	... ...	5 months	
,, 2	,, ...	6	,,
,, 1 case	... ...	9	,,
Total 29			

and thus that in the majority of cases the period was a comparatively short one. The fœtus conceived during lactation was in 14 cases the second member of the family, in eight cases the third, and in seven cases the fourth; and in connexion with later members of a family there was no such occurrence. It therefore certainly appears that this occurrence takes place most frequently in connexion with the earlier children of a family, as might, perhaps, be expected looking to the larger number of early children and the greater frequency of bottle-feeding among the later ones. This would not, however, seem entirely to explain the matter or the entire absence of cases of overlapping among the later children and it may safely be said that this condition of affairs is extremely uncommon. The average duration of lactation of those infants during whose suckling pregnancy occurred was 12 months, while of all the 259 lactations the average duration was ten months. In only two cases did conception occur prior to the sixth month after delivery and the average date of conception was nine months after delivery, while the importance of the lengthened average period of lactation is observed from the fact that no fewer than 12 cases occurred at, or after, the tenth month. These figures largely bear out the statement of McCann that "the greater number of pregnancies during lactation commence after the eighth month."

In 17 cases (59 per cent.) menstruation occurred prior to conception and in 12 cases (41 per cent.) there was no previous menstruation. Remfry, in the course of 900 lactations, found amenorrhœa in 503, or 57 per cent., and menstruation occurred in 388, or 43 per cent., and these figures corresponded very closely with my own, which were 60 per cent. with amenorrhœa and 40 per cent. with menstruation. Of the 503 cases with amenorrhœa he found that pregnancy occurred 29 times (6 per cent. of cases) during lactation, while of the 388 cases with menstruation pregnancy occurred in 226 (60 per cent.) during lactation, and he therefore concludes that where menstruation returns during lactation the chances of pregnancy occurring are ten times greater than where there is amenorrhœa. While in my cases it was also found that pregnancy was more common after the return of menstruation the same marked disproportion between the two classes of cases was not obtained, and thus while in 153 lactations associated with amenorrhœa pregnancy occurred in 12 cases, or 8 per cent., in 100 cases associated with menstruation pregnancy occurred in 17 cases, or 17 per cent., pregnancy consequently occurring rather more than twice as frequently after the return of menstruation as where there was amenorrhœa.

As regards the condition of the children, those in fairly good health have been described as alive and well, while the weakly children have been described as delicate, the sucklings naturally being of greater age than the fœtuses and therefore their lives having been exposed to greater dangers. Notwithstanding this it is found that of the 29 sucklings 22 (76 per cent.) were alive and well at the date of examination, while of the 31 fœtuses 13 (42 per cent.) only were alive and well at this date. These figures appear to me to be somewhat striking. The works of Prochownick and Noel Paton, in human subjects and guinea-pigs respectively, have conclusively shown the remarkable effect of variations in maternal diet on the embryos, and one might, *a priori*, expect to find the infant of a poor woman, not too fully nourished and for some period, at least, of her pregnancy engaged in the function of lactation, would start life severely handicapped. That this is so my figures show.

Jacobi, many years ago, stated that "lactation and pregnancy are incompatible," but this opinion of the condition would appear to have been anything but universally accepted and in support of the contrary opinion Paquy reports 29 cases of pregnancy occurring during lactation in none of which was any evil effect whatever noticed, and he refers to the well-known condition of affairs among domestic animals, an analogy which appears to me in many respects unsound. That the condition is by no means markedly uncommon has already been pointed out by Robertson and Church and the cause of this is undoubtedly to be found in the widespread belief among the working classes that so long as lactation is continued pregnancy will be avoided—a belief which leads inevitably to the undue protraction of breast-feeding. In such cases the importance of the condition is but ill-recognised from the fact that the suckling probably continues well and thriving, while irrevocable injury is being done to the unseen fœtus and consequently the greater need there is of emphasising the dangers of the position.

That the constant reiteration of the command for maternal nursing is as imperative to-day as it ever was goes without saying, but it appears to me indubitable that along with this is the very important obligation of the demand for a strictly limited lactation. My own figures are small in number but very largely agree with, and corroborate, those of former authors, and judging by them I advance this opinion on the following grounds: 1. The concurrence of pregnancy with lactation is comparatively common. 2. Conception is rare within the first six months of lactation and uncommon before the eighth month. 3. Where pregnancy and lactation overlap the fœtus is likely to suffer. That every case must be judged on its own merits is a truism, but given fairly average conditions, a strong healthy suckling, and the prospect of intelligent hand feeding the above facts point very strongly to the advantages to be derived from weaning early in the eighth month.

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Edinburgh.

TRADE ADVERTISEMENTS AND "THE LANCET."—The several correspondents who have sent to us a post-card issued by Messrs. Wright, Layman, and Umney containing an advertisement of Wright's Coal-tar Soap, with a reduced fac-simile of the heading of THE LANCET, will kindly note that this unauthorised and unjustifiable use of our title has been dealt with, and the further issue of the offending card has been stopped. In justice to Messrs. Wright, Layman, and Umney, it should be stated that the card was the creation of their advertising agents who have apologised for the offence and have delivered up to us the remaining stock of the fac-simile headings.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF CONGENITAL RIGHT INGUINAL HERNIA CONTAINING A MECKEL'S DIVERTICULUM ADHERENT TO THE APEX OF THE SAC.

BY C. B. HOWSE, F.R.C.S. ENG.

A MALE, aged 18 years, was admitted to York County Hospital on Dec. 12th, 1905, for a radical cure of a right inguinal hernia. The hernia had been present from birth. It extended into the scrotum when the patient stood up and formed a swelling of about half the size of the adult fist. On putting the patient on his back the whole swelling was apparently easily reducible with characteristic gurgling. On closer examination, however, a peculiar indistinct mass was felt in the line of the inguinal canal, which gurgled distinctly on rolling it between the thumb and index finger; it had no impulse whatever on coughing and could not be reduced. Mr. F. Shann, under whose care the patient was, kindly gave me permission to operate, and on cutting down and opening the sac I found gut which was bound down by many adhesions to the apex of the sac. The piece of gut was adherent by its blunt apex only. Seeing that there was no mesentery I thought at first it was an infantile cæcum, but on dividing the above-mentioned adhesions and pulling down a couple of feet of gut I found it was a Meckel's diverticulum about two and a half inches long and of about the same diameter as the gut it sprang from. How far along the ileum it arose was not seen as the cæcum was not brought into the wound. A few silk sutures were inserted to cover the raw end of the diverticulum with a peritoneal covering. During the operation distinct peristaltic movements were seen in the diverticulum. The remainder of the operation consisted of Bassini's method of radical cure. The wound healed by first intention and the patient was up on Jan. 5th, 1906.

Meckel's diverticulum occurring, I believe, in only about 2 per cent. of subjects, its presence in a hernial sac must be very rare. I can find no record of its occurrence in this situation and therefore I think the case worthy of publication.

Chiswick, W.

A CASE OF LUMBAR PUNCTURE IN OBSTRUCTED LABOUR.

BY FRANCIS FREDERICK JONES, M.R.C.S. ENG., L.R.C.P. LOND.

ON Dec. 10th, 1905, I attended a woman in labour with a seven months' fœtus. The breech presented and the head was of enormous size. Being convinced that the child was dead I punctured the spinal membranes in the lumbar region with a scalpel. Some cerebro-spinal fluid at once escaped, but the head did not diminish much in size, so I went home to get a perforator. On my return, however, I found that the head was born in consequence of the fluid draining away during my absence. A trocar and cannula would probably have been more suitable than a scalpel for making the puncture.

Twerton-on-Avon, Bath.

CENSURE OF A MIDWIFE.—At an inquest on the body of an infant, held at Buckland, Devon, on Jan. 16th, the medical evidence showed that the child was stillborn but that it would probably have lived if a competent person had attended at the birth. The mother had been under the care of a midwife who stated that she had acted as such for 16 years but had no certificate and intended to give up her work. The coroner said that upon her undertaking to do so no further proceedings would probably be taken. The jury returned a verdict that the child was stillborn through improper attention at birth.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Three Cases of Myoclonus.—"Interrupted Circulation" as a Therapeutic Agent.

A MEETING of this society was held on Jan. 23rd, Sir DYCE DUCKWORTH being in the chair.

Dr. FREDERICK TAYLOR read a paper on Three Cases of Myoclonus. He said that the first patient was a labouring man whom he had seen for the first time 30 years previously. The condition had not materially altered in the last six years. The head was in constant movement in consequence of clonic contractions of the muscles of the neck; and the movements were partly backward jerks and partly lateral movements of a quiet shaking character. Thus the head was moved right, left, and right again, then a pause, then the movement was repeated. The movements were worse when he was standing than when lying down, and they were increased by efforts to follow objects with his eyes. As he stood he swayed a little, both with eyes open and shut. When he walked the gait was ataxic. The ataxia varied and he was often more steady when walking alone than when helped. The ataxia appeared to be due to sudden rising on one or other foot and was less a cerebellar reel than a forward and backward "pitch." Lying in bed he could move the legs more steadily with only a little swaying when they were lifted high. There was a constantly repeated contraction of the lumbar and flank muscles, chiefly of the quadratus lumborum, but also of the lumbar portions of the erector spinæ, latissimus dorsi, and abdominal muscles. These clonic contractions, repeated at the rate of about 100 in the minute, were sufficiently powerful to shake the bed; they no doubt accounted for the slight swing of the lifted legs and largely, if not entirely, for the ataxia of his gait. There were no similar movements in the thighs, legs, buttocks, or in the upper part of the trunk or arms. The muscles were normal in bulk and electrical reactions and the sensory functions were normal. There was no nystagmus. The patient never walked properly, but the movement of his head began when he was aged 21 years. He had never had vomiting or convulsions, but recently he had complained of headache and occasional vomiting. He was in Guy's Hospital for several months in 1903 and was treated with potassium bromide and electricity but without any result. The case appeared to Dr. Taylor to be a form of the condition described in 1881 by Friedreich as paramyoclonus multiplex and more recently by others as myoclonus. The constant condition was the clonic contractions taking place in the lumbar and cervical muscles, and the ataxia, for which the lumbar contractions were responsible. The second case came under Dr. Taylor's notice in October, 1879. The patient was aged 19 years, and four years previously he had suffered from cramps in the right hand which were thought to be writer's spasm. The affection then spread to the muscles of the neck and when Dr. Taylor saw him there was a close resemblance to a case of spasmodic wryneck, with unusual extension to the arm and greater action in the posterior cervical muscles than in the sterno-mastoids. Seven months later he began to have clonic contractions of the muscles of the left loin, chiefly the quadratus lumborum. In 1882 he was still suffering from spasmodic contractions of the sterno-mastoid, posterior cervical muscles, and left flank muscles. The latter constantly drew his left shoulder down to his left ilium and bent him bow-like, a sort of pleurosthotonos. Several years afterwards he was in the same condition. The view originally taken of the case was that it was of the nature of wryneck, with an extension to a new region—wryloin. But as long as the intimate pathology of this condition was unknown it could scarcely be excluded from the very wide group of myoclonus. The third case had been seen recently and it was that of a woman suffering from paraplegia, secondary to the formation of a cancer in the breast which was removed in 1901. From her childhood, however, she has been subject to a tremulous condition of the arms which on careful examination proved to be due to constant clonic contractions of the muscles arising from the internal condyle on each side. The

biceps and triceps were quiet, but a slight shock in the arm due to the above-mentioned contractions could be felt. The pathology of cases called myoclonus was at present obscure. The movements present resemblances to those of chorea, electric chorea, spasmodic wryneck, convulsive tic, and certain movements in hysteria. They were spontaneous, intermittent, sudden, or "lightning-like," single or multiple, but in all cases incoördinated contractions of muscles, or large parts of muscles. Considerable variety was possible in the part of the body affected and the extent of the body involved.

Dr. E. FARQUHAR BUZZARD referred to the indefinite idea which was conveyed by the term "myoclonus" which had been applied to most various forms of muscular spasm. He would apply the term to those cases in which the muscular contractions were of "lightning-like" character but he admitted the difficulty of separating such contractions from other forms of muscular spasm. In considering the pathology of the condition, he said that the contractions might be due to impulses from the central nervous system or to the increased excitability of the muscles. He was inclined to think that too much was attributed to the central nervous system and recently it had been shown by physiologists that there were two contractile substances in muscle: (1) a fibrillar substance, and (2) protoplasmic substance. When the protoplasmic substance was in excess then the slow contraction similar to that seen in Thomsen's disease was obtained, whilst in myoclonus he suggested that an increase of the fibrillar substance might be present and lead to an increased excitability and rapid contracting of muscles.

Dr. C. E. BEEVOR said that he thought that the second case reported belonged rather to the condition known as spasmodic wryneck than to the class myoclonus. He would use the term myoclonus to indicate sudden muscular contraction of single muscles which could not be thrown into action by will. He thought that such muscular contractions must be of spinal, and not of cortical, origin, for movements were represented in the cortex and not single muscles. With regard to the third case reported, he was of opinion that that was a true case of paramyoclonus.

Dr. F. E. BATTEN said that he was of opinion that the term myoclonus should not be used for all forms of muscular contraction but that the term should be limited to sudden clonic contraction of single muscles or parts of muscles. He thought that the classification suggested by Lundborg was that which was most suitable under the present conditions of knowledge: (1) myoclonus, using the term as a symptom indicating a form of myospasm characterised by spontaneous and isolated contraction of individual muscles; (2) myoclonus multiplex; and (3) myoclonus epilepsy. In reply to Sir Dyce Duckworth, he said that he would place Dr. Taylor's first case under heading (1) and regard the myoclonus as a symptom occurring in association with a case of spasmodic tic.

Dr. TAYLOR, in reply, said that he fully realised the difficulty of classification and he had regarded his second case as one of spasmodic wryneck until the likeness to his first case seemed to justify it being classed as myoclonus.

Dr. W. EWART then read a paper entitled "'Interrupted Circulation' as a Therapeutic Agent" and showed illustrative cases of rheumatoid arthritis. The paper is published in this issue of THE LANCET (p. 213).

MEDICAL SOCIETY OF LONDON.

Uncontrollable Vomiting in Pregnancy.—Dilatation of the Cervix Uteri with Bossi's Dilator.

A MEETING of this society was held on Jan. 22nd, Sir LAUDER BRUNTON, the President, being in the chair.

Dr. G. H. A. COMYNS BERKELEY read a paper on Uncontrollable Vomiting in Pregnancy. He commenced by narrating the case of a woman, aged 24 years, who was four and a half months pregnant and in whom it was proposed to induce premature labour on account of uncontrollable vomiting. A few weeks later hæmorrhage set in and abortion took place. At a subsequent pregnancy uncontrollable vomiting again occurred associated with severe pain in the pelvis and lower abdomen, the pulse being unduly rapid (from 110 to 120). Some of the symptoms of intestinal obstruction supervened. The uterus was emptied but the patient died two days later. At the necropsy a Meckel's diverticulum was found which passed through a hole in the mesentery of the small intestine. The Meckel's diverticulum had evidently become pushed upwards by the enlarging uterus at each of the pregnancies and becoming constricted against the edge of the orifice in the mesentery had given rise to vomiting and, finally, in the last pregnancy had become gangrenous and had resulted in death. Details were then given of 32 other cases in which hyperemesis gravidarum had been diagnosed but in which the vomiting was proved on the death of the patient to be due to some other cause not diagnosed during life. Among these causes were the following: cancer of the pylorus or stomach, tumour of the brain, tuberculous meningitis, epigastric hernia, carcinoma of the liver, latent abscesses in various situations, constriction of the ileum by a band of adhesion, dermoid cyst of the ovary, fixation of the uterus by adhesions, gangrene of the intestine, septic bronchial glands, partially strangulated hernia, ovarian tumour with twisted pedicle, gastric ulcer, malignant disease of the ovary, and old adhesions of the intestines. The symptoms of true hyperemesis gravidarum were next discussed. The vomit occasionally became stercoraceous. The examination of the blood and of the urine might afford a clue to the diagnosis of the cause. The vomiting which was directly due to pregnancy might be neurotic or toxæmic in origin and the prevailing opinion in the medical profession was that true hyperemesis gravidarum was in most cases toxæmic and therefore a more exhaustive investigation of the blood and of the urine in such cases might throw considerable light on the subject. The vomiting that was only associated with pregnancy might be reflex or organic in origin. Reflex vomiting was generally connected with some displacement of the uterus or lacerations of the cervix. The organic causes of associated vomiting were very numerous; some were discoverable by careful search but others, like those previously mentioned, were practically undiscoverable during life, but the greatest care should be exercised and the most exhaustive examination should be made. Dr. Berkeley advocated that every endeavour should be made to obtain a post-mortem examination of all cases dying from supposed hyperemesis gravidarum, by which means he thought that the present conception of the disease might be considerably altered. He also suggested that the induction of premature labour in cases of hyperemesis should be carried out much earlier than was usually the custom not only because the chances of recovery would be much greater—since in some of these cases which were left the woman died in spite of the induction and thus the death-rate was abnormally high—but also because, if the vomiting did not cease after the uterus was emptied there would then be time to seek for, and to deal with, some associated cause. In his view the death-rate would be considerably lowered by these means.—Dr. V. BONNEY confirmed the findings at the post-mortem examination on Dr. Berkeley's case. The difficulty of diagnosing such cases must be very great. He referred to a case of hyperemesis gravidarum that he had seen in which nothing could be found at the time. Subsequently there was evidence of there having been an extra-uterine gestation, which resulted in death consequent on its rupture. In another case he had found abscess of the uterine wall.—Dr. G. F. BLACKER referred to the case of a woman, aged 43 years, who was said to be pregnant and who was the subject of uncontrollable vomiting and albuminuria. It was, however, ascertained that she was not pregnant at all; under an anæsthetic a fibroid of the uterus was discovered. He advocated more exhaustive examination of such cases. The toxic cases were most serious; cases of reflex vomiting got well.

Dr. BLACKER read a paper on Dilatation of the Cervix Uteri with Bossi's Dilator. One of the most important questions that the obstetrician had from time to time to answer was what was the best method of rapidly dilating the cervical canal in cases where immediate delivery was indicated in the interests of the mother or of the child. Bossi's method of rapid artificial delivery had now been in use for some 15 years and a sufficient number of cases had been recorded to enable a correct judgment to be formed as to its merits and defects. It was claimed for his method of rapid dilatation of the cervix with a mechanical metal dilator that it was certain and successful even in cases of primiparæ in whom the cervix had undergone no shortening or obliteration and that such dilatation could be carried out with great rapidity. The use of the dilator involved no extra risk of septic infection and the method which Bossi claimed was a physiological one, inasmuch as it excited uterine contractions. The recorded cases showed that it was possible to dilate the cervix when it was still intact by this instrument,

but such a procedure entailed great danger of tearing the tissues of the cervix. The average length of time required in cases in which the canal was intact at the time the operation was begun was 24 minutes, while in cases in which it was partially obliterated at the commencement of the operation it was 16 minutes. These figures showed that this was the most rapid method of completely dilating the cervical canal available, short of making incisions into the tissues or practising vaginal Cæsarean section. The after-histories of the recorded cases proved further that there was very little risk of sepsis. The dilatation of the cervix could, however, hardly be called physiological, since the canal was dilated as a whole and there was no obliteration of its cavity. The most serious objection which could be urged against the use of such powerful dilators was the grave risk of tearing the tissues of the cervix as the result of the forcible dilatation. That dangerous tears of the cervix might and did occur could not be denied, but long series of cases had been published both by Bossi and Leopold in which no tears or only slight tears had resulted. Severe tears of the cervix were met with in only 4 per cent. of Leopold's 47 cases and in somewhat less than 3 per cent. of Bossi's last 107 cases. No case had so far been recorded in which the death of the patient could be attributed to the use of the dilator. Dr. Blacker gave the results of ten cases in which the instrument had been used by his colleague, Dr. Herbert R. Spencer, or himself. The conclusions which he (Dr. Blacker) came to were that in Bossi's dilator they had a means of dilating rapidly the cervix which was applicable both to cases in which the cervical canal was still intact and to cases in which it was partially dilated. In the former class of cases, however, there was a very great danger of tearing the tissues. This danger existed even in cases where the cervix was already beginning to dilate and depended rather on the degree of softening present than on the amount of dilatation. However, even in the most favourable conditions lacerations might occur and therefore the dilator should only be used in the most urgent indications—that is to say, in cases where grave danger existed to the life of the mother or to that of the child and where rapid emptying of the uterus was likely to lessen such danger. Happily such cases were of very rare occurrence. Bossi's method should not be used for placenta prævia or in the induction of premature labour. Faulty methods were no doubt responsible for some of the unfavourable results but the instrument afforded a good means of rapid and complete dilatation where the cervix was obliterated and the rapid emptying of the uterus was indicated.

LIVERPOOL MEDICAL INSTITUTION.

The Acid Extract of the Duodenal Mucous Membrane as a Remedy in Diabetes Mellitus.—The Hæmatology of Pregnancy and the Puerperal State.—The Complications of Pneumonia and their Treatment.

A MEETING of this society was held on Jan. 18th, Mr. FRANK T. PAUL, the President, being in the chair.

Dr. J. HILL ABRAM read a note on the Acid Extract of the Duodenal Mucous Membrane as a Remedy in Diabetes Mellitus, which will be found on p. 220 of our present issue.—Professor W. CARTER considered Dr. Abram's communication as most hopeful and full of encouraging possibilities in the treatment of a disease which, when occurring in patients as young as one of his, had always been regarded as fatal. He for one thanked him heartily for having unreservedly placed in their hands his methods.—Professor MOORE, Dr. R. J. M. BUCHANAN, Dr. A. STOOKES, Dr. E. T. DAVIES, Dr. J. GRAHAM-MARTIN, and Dr. O. T. WILLIAMS also spoke.

Dr. J. C. M. GIVEN read a paper on the Composition of the Blood in Pregnancy and the Puerperal State. It was based on the investigation of 12 cases of labour in which the blood was examined before and after labour and at stated intervals during the lying-in period. A marked leucocytosis of the polymorphonuclear type occurred immediately after labour and rapidly sank to normal by the end of the first week. A progressive increase in the number of the lymphocytes then occurred, until at the end of the second or third week they were more numerous than the polymorphonuclear cells. The influence of premature labour, stillbirth, albuminuria, &c., on the blood count was noted.—The PRESIDENT expressed his regret that time would not permit of any discussion on Dr. Given's valuable and interesting paper.

Dr. NATHAN RAW read a paper on the Complications of Pneumonia which he had met with in an observation of 1832 cases. He referred more especially to empyema, pericarditis, endocarditis, and the acute general infections produced by the pneumococcus, such as septicæmia, meningitis, arthritis, and peritonitis. Dr. Raw briefly referred to the treatment in each condition.—Professor CARTER referred to two conditions in pneumonia not alluded to by Dr. Raw—one at the onset of the disease where the engorgement was sometimes so general as to threaten life. The patient sat up, the right heart was over-distended, the pulse was small, the face was pale or livid, and the respiration was laboured. In this condition bleeding was followed by speedy relief. The other was the violent delirium which sometimes followed the crisis; opium, which would possibly have killed the patient at an earlier stage, would now save his life. Thirdly, Professor Carter thought that, considering the intense coagulability of the exudate and the fact that it contained a large amount of calcium salts, preparations of this metal should not be administered at any stage of the disease.—Dr. ABRAM said that in a healthy subject complications were less often seen than in almost any other infective disease. They were mainly due to previous damage—e.g., pneumococcal endocarditis implanted upon old valvular trouble. Many complications, too, were due to secondary infections, as in a congenital heart case under his own care where the infective trouble was proved to be streptococcal in nature. Dr. Abram had observed that the onset of pericarditis was often marked by orthopnœa. He was opposed to the use of the needle without preliminary exposure of the pericardial sac. The great difficulties of diagnosis had been pointed out by Trousseau. Dr. Abram could not agree that jaundice was often seen in right-sided cases; in the early stages jaundice was the result of toxæmia and not serious, and in the later stages it was often the expression of an infective cholangitis and most deadly. He corroborated Professor Carter's remark respecting delirium following the crisis and recommended the use of opium combined with digitalis.—Dr. W. B. WARRINGTON remarked that among the complications seen by him were apical abscess of the lungs, the diagnosis being made by the persistent presence of elastic fibres in the sputum with diplococci and no tubercle bacilli; extensive and confluent hæmorrhages under the skin, the necropsy revealing pneumonia only; gangrene of the lungs; and apparently primary pneumococcal meningitis. Dr. Warrington insisted on the importance of suspecting pyo-pericarditis in cases of empyema in children which did not pursue a normal course and alluded to the valuable papers of Dr. J. A. Coutts.—Dr. A. G. GULLAN related two cases of pneumonia in which typical relapses occurred after 24 hours of normal temperature. These relapses both lasted about eight days, terminated by crises, and were accompanied by the physical signs of lobar pneumonia in another part of the lungs. Dr. Gullan also referred to the chronic pneumonia or permanent consolidation of the lobe affected which occasionally followed acute lobar pneumonia, an example of which he had seen in a woman, aged 54 years.—The following members also took part in the discussion: Dr. BUCHANAN, Dr. E. E. GLYNN, Mr. W. STOCKDALE, Dr. E. T. DAVIES, and Dr. J. LLOYD ROBERTS.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Sleeping Sickness in Uganda.—Use of Stovaine as a Spinal and Local Anæsthetic.—Relation of Spirochæte Pallida to Syphilis.—Exhibition of Specimens.

A MEETING of this society was held on Jan. 17th, Dr. J. O. AFFLECK, the President, being in the chair.

Captain E. D. W. GREIG, I.M.S., read a communication illustrated by numerous lantern slides on Sleeping Sickness in Uganda. He said that since the epidemic broke out fully 100,000 natives had died in Uganda since 1900. The work of investigation was commenced in May, 1903. The disease ran an extremely chronic course, three to four years being usual. The lymphatic glands underwent enlargement and formerly it was a usual practice of the slave dealers to examine the posterior cervical glands of the slaves and to reject any in whom these glands were enlarged. The patient's temperature remained normal for long but when the nervous symptoms developed the temperature during the last six to seven months of the patient's life underwent a daily rise. During

the week immediately preceding death, however, the temperature gradually fell until it became that of the surrounding air. The juice from the enlarged glands showed the presence of the characteristic parasite so that the disease could be diagnosed at a very early stage. This was of great importance as regards the migration of the individual and the risk of spreading the disease to districts which formerly were free from the disease. The axillary and later the inguinal glands underwent enlargement. The nervous symptoms manifested themselves in a peculiar facies, marked tremor of the tongue, ataxic gait, and slowness of speech; tremors of the muscles of the hands were also present. There might be acute mania or nervous exaltation. The patient gradually became more and more emaciated until he was merely skin and bone, completely bedridden, and with numerous bedsores and jigger sores. It was only during the last week of life to which the term "sleeping sickness" might truly be applied. The parasite was not present in the cerebro-spinal fluid at an early period of the disease but during the nervous symptoms it might be obtained from the cerebro-spinal fluid. The presence of the trypanosome was synchronous with the nervous symptoms. As regards the blood, anæmia was not marked, there was no great reduction in the number of the red blood corpuscles, and, indeed, their number might even rise above the normal as to 6,000,000. The hæmoglobin might also rise above the normal amount. The mononuclear leucocytes were also increased in number. In the brain the convolutions were flattened and there was an increase in the subarachnoid fluid. Microscopically there was a characteristic perivascular infiltration of lymphocytes and plasma cells (small and large lymphocytes, plasma cells, and granule cells). As a terminal invasion the diplo streptococcus might be found. In the stomach underneath the mucous membrane a number of petechial hæmorrhages might be seen. These, when digested by the gastric juice, gave the appearance of charred patches. The parasite received the name of the trypanosoma Gambiense. In the blood or cerebro-spinal fluid it was actively motile and was about three times as long as a red blood corpuscle. The body of the parasite possessed a large nucleus and a small centrosome. It possessed a large food vacuole and along its dorsal surface a fine fringe ran. At the ends were one or two free flagella. From 50 to 70 per cent. of apparently healthy natives harboured this parasite in their blood. Many of these died after a longer or shorter period, while others had apparently escaped. In the non-sleeping sickness area the parasite had never been found. Experimental work had been done on monkeys, cattle, sheep, dogs, guinea-pigs, &c. Cerebro-spinal fluid was injected into these and for months they might remain without evidence of the disease. In all the monkeys a form of malarial parasite was found in the blood but before inoculation trypanosomes were absent from their blood. The disease remained very closely confined to the margins of the Lake Nyanza and its islands and to the margins of Albert Nyanza. The tsetse-fly (glossina palpalis) was the carrier of the parasite. This fly laid no eggs but a single actively motile larva which three weeks later was hatched out (pupifera). In the stomach of this fly an enormous multiplication of trypanosomes took place. They were seen to be undergoing division into several types, probably sexual forms. This multiplication took place in 10 per cent. of the flies. A longitudinal fission of the parasite was the rule. The distribution of the fly corresponded very exactly with the distribution of sleeping sickness. The tsetse-fly was very widely distributed over Africa but it required a shady undergrowth for its development. In the experiments the flies were allowed to feed on the blood of infected men and then on monkeys. The interval between these acts varied from eight to 48 hours, and in all cases the disease was transmitted to the monkeys. On investigation it was found that the flies in the affected belt contained trypanosomes. As regards treatment, arsenic in the form of Fowler's solution given subcutaneously was tried. During its administration the parasites were absent from the blood but they reappeared and multiplied when arsenic was discontinued. It was the wild game which seemed not to suffer from the disease but which harboured the parasite, and so tame domestic animals became infected. Where these wild animals existed no tame animals could exist. These wild animals, as also some of the natives, appeared to be immune to the disease. Captain Greig received a cordial vote of thanks for his interesting communication.

Mr. G. L. CHIENE read a communication on the Use of Stovaine as a Spinal and Local Anæsthetic. He said that the use of a general anæsthetic was always a source of possible danger to the patient and now when the dangers due to the actual operative procedure had been reduced to a minimum the anæsthetic might be regarded as the most dangerous factor in many operations. Bier first attempted the production of anæsthesia by spinal injection. Cocaine was used but as the after-results were often of a most unpleasant or even dangerous nature the method for a time fell into disuse. In February, 1904, Fourneau, a French chemist, first brought before the profession the hydrochlorate of amyleine which he named stovaine. This product when injected into man slowed the pulse and caused contraction of the pupil. Pallor was not induced but often flushing supervened. Dyspnœa, oppression, uneasiness, or excitement was absent and there was no tendency to syncope. It was certainly much less toxic than cocaine and so could be given in larger doses if required. As after-result there was usually a slight rise of temperature which might last for some days. There was little tendency to sickness or vomiting, while headache and spinal neuralgia were rarely present. The general condition was good and the patient could enjoy an ordinary meal. Reclus in July, 1904, gave the results of nine months' experience with stovaine as a local anæsthetic. He employed it in doses twice the strength of cocaine. Chaput maintained that many laparotomies could be performed under spinal anæsthesia with stovaine. In 100 cases 45 operations were performed on the legs, 26 on the perineum, and 29 on the abdomen (hernias, hysterectomies, appendectomies, and ovariotomies). He stated that it was very useful in fractures and dislocations of the lower extremities. The height to which the anæsthesia rose varied greatly with the dose and his failures occurred only when small doses had been given. In his experience the after-results of stovaine were much less severe than those of cocaine. The dose injected varied from four to eight centigrammes and he did not care to employ it in patients over 65 years of age. Mr. Chiene had employed this drug on various occasions since October, 1904, combined with hemisine. In his experience a larger dose was required to produce spinal anæsthesia than that recommended by foreign authorities. He used Tuffier's solution, 10 per cent. of stovaine in sodium chloride solution. Sterilised solutions of the drug were supplied in *ampoules*. After injection into the spinal canal a sensation of pins and needles was felt in the legs and in about seven minutes the patient was unable to lift the limbs. At this time sensation to pain was lost though that to touch remained. Anæsthesia commenced in the perineal region, then affected the toes and feet, and passed gradually up the limb. It passed off in the reverse order. The operations which he had performed under spinal anæsthesia induced by stovaine included inguinal hernias, transplantation of tendons, removal of tuberculous glands in the groin, operation for severe traumatic flat-foot, hæmorrhoids, varicose veins of both legs, &c. Mr. Chiene was quite satisfied that with more experience both in technique and in the dosage of the drug failures would be exceptional. Lumbar puncture was now a routine method for diagnostic purposes in medicine and accidents were rarely heard of. It was too soon to compare the risks with those of general anæsthetics but it must be allowed that this method might be preferable in many cases. It was stated by some authors that gangrene of the skin occurred at the point of injection, but in Mr. Chiene's experience with the combination of drugs already mentioned he had not had a single case of gangrene of the cutaneous tissues.—The communication was discussed by Dr. T. D. LUKE, Mr. F. M. CAIRD, and Mr. J. W. STRUTHERS.

Dr. THEODORE SHENNAN read a paper on the Relation of Spirochæte (Spironema) Pallida to Syphilis.

The following specimens were exhibited:—

Dr. JAMES CAMERON: Strangulated Testicle from a case of Strangulated Hernia in an infant aged six weeks. Operation was followed by recovery.

Dr. H. DOUGLAS WILSON (Harrogate): Radiograms of the Hands from a case of Tophaceous Gout.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 19th, Dr. J. F. W. Tatham, the President, being in the chair.—Mr. W. Hunting, F.R.C.V.S., read a paper on Glanders in Horse and

Man. Though the disease had been scheduled since 1869 there were no very trustworthy statistics before 1881, since which date 44,943 horses had been returned as dying from glanders, giving an average of 2000, of the probable value of £40,000 or £50,000, per annum. Yet it would not be difficult to stamp it out, for 70 per cent. of the cases occurred in London and 90 per cent. in the home counties, the only other centre being Glasgow, and it was not one that spread with any rapidity; but the reluctance of the Treasury to give the money for compensation had hitherto prevented the application of the provisions of the Diseases of Animals Act, the Board of Agriculture urging the plea for inaction that the loss of human life through it was insignificant, not more than two, and once only six deaths appearing in the Registrar-General's annual returns. There was, however, strong ground for believing that the true mortality was very much greater, probably nearer 100, the vast majority being erroneously reported as rheumatic fever, cellulitis, pyæmia, &c. Inoculation and ingestion were the means by which the disease was communicated, ingestion with water and fodder being by far the more frequent. The incubation period was very variable, from two weeks to two months, though the animals might appear in perfect health for a year or even longer. When complicated with pneumonia or pleurisy it might be fatal in a few days or after apparent recovery a relapse might occur. The typical clinical symptoms in the horse were enlargement of the submaxillary glands, with nasal discharge and ulceration of the mucous membranes of the trachea, larynx, and nares, swelling of the lymphatic glands and vessels with small tumours under the skin, "farcy buds," and swelling of one or more of the legs. The only constant lesions found post mortem were nodules in the lungs but the swelling of the bronchial glands always observed in tuberculosis was rare. In 1000 post-mortem examinations made by the veterinary inspectors of the London County Council 462 showed lesions in the lungs only, the nasal mucous membrane was ulcerated in 378, that of the larynx in 179, and of the trachea in 201, the lungs being also implicated in every case. So long as unbroken nodules in the lungs alone were present the disease did not appear to be communicated to other and healthy animals, but such horses might at any moment develop ulceration or the glands might burst and the animal become highly infective The discovery of mallein in 1890 by a Russian veterinary surgeon furnished an almost infallible means of diagnosing the existence of the disease in the latent stages; like tuberculin, mallein was an extract of the bacilli of the disease, the injection of which into a healthy animal gave rise to no symptoms, but when glanders was present there was not only a characteristic febrile disturbance but a swelling at the site of the injection, this double reaction making the test more decisive than that of tuberculin, but the intensity of the reaction bore no relation to the extent or the duration of the disease, simply disclosing its presence. The existing regulations were wholly inadequate, the enjoined notification, diagnosis by a veterinary inspector, slaughter and compensation to one-fourth of the value of the animal, but there was no provision for the isolation of "contacts" and the disease might go on spreading until the owner sold off his stud to form foci elsewhere in perhaps a score of stables in place of the one originally invaded. Without mallein diagnosis was impossible in the early stages and in the later, when it was obvious, the owner might, in consideration of the meagre compensation, prefer to conceal the fact and get the utmost possible work out of the horse until it was about to die and no longer of use. Some cab-owners habitually and knowingly bought glandered horses, deferring notification so long as possible or selling their whole stock if threatened by a raid from the police or inspectors. As to the prevalence of glanders in man, the Registrar-General's returns gave no notion of the real number of cases; they were never reported by private practitioners and those correctly diagnosed in hospitals had always been admitted under false descriptions—rheumatic fever, typhoid fever, pneumonia, septicæmia and pyæmia, cellulitis, even confluent small-pox, influenza, and "blood poisoning"; in fact, the clinical symptoms in man were far less definite than those in the horse, and it was rarely that a diagnosis could be made with certainty save after a bacteriological examination of the fluid from the cutaneous nodules or of the subcutaneous infiltration of the "cellulitis." Mr. Hunting then gave notes of 11 such cases admitted under various names into hospitals and a description of the necropsy of one by Dr. Charles Creighton. The mode of infection in man was commonly supposed to be inoculation, but this he believed to be far less frequent than ingestion through "eating with unwashed hands" after handling infected horses. Local manifestations which would indicate the point of inoculation were very rare. Nodules in the lungs were found post mortem, but an absolute diagnosis was even then seldom possible except bacteriologically, though glanders should be suspected in all cases of "cellulitis" or those simulating rheumatic fever, erysipelas, &c., in horse-keepers, cabmen, and others employed in stable-yards.—A letter was read from Dr. E. W. Goodall in reference to the two cases admitted to the Eastern Hospital as typhoid fever. In the first case the presence of intra-muscular abscesses, pathognomonic of glanders but never occurring in typhoid fever, led him to an immediate diagnosis, but he should not have suspected the nature of the second case if it had not been for the man's occupation.—Sir John McFadyean, while agreeing in every essential matter with Mr. Hunting, considered his statements as to the non-infectivity of the early stage as rather too strong, for since the extension to the trachea was due to the escape of bacilli from the pulmonary nodules they might easily at this stage be carried a little farther and render the saliva and nasal mucus infective or escape in coughing.—Dr. H. Armstrong deprecated compensation as tending to encourage the trade in glandered horses and to defeat its ostensible purpose.—Dr. W. Bulloch had seen seven cases at the London Hospital. In the 15 years before the opening of the bacteriological laboratory in 1900 they had no record of a single case, but so soon as bacteriological examinations were systematically carried out they had six cases in two years. Few medical men had ever seen a case, so that it was not surprising that they should fail to recognise one when they met it, though the occupation of the majority of the patients ought to suggest the nature of the disease. One case sent in by the medical officer of health of Shoreditch had been diagnosed by successive practitioners as acute rheumatism, pneumonia, acute rheumatism again, and, lastly, confluent small-pox when the cutaneous nodules began to break up, though they contained not pus but a yellow glairy fluid. Mallein could not be recommended with the human being as, apart from possible danger, it failed to give the local swelling which constituted its chief diagnostic value in the horse.—Mr. F. T. G. Hobday, F.R.C.V.S., remarked on the small number of cases among men employed in cab-yards which were hotbeds of the disease. In one yard 90 horses had been slaughtered in 18 months and in another 15 out of 16 reacted. Inspectors had no power to touch animals that did not show clinical signs; they ought to have power to use the mallein test on all "contacts" and to isolate if they did not slaughter them. Frequently when a horse had been condemned the owner sold off the rest, many, no doubt, already diseased; others regularly kept glandered horses for night work until they broke down. He considered the fee of £2 for notification was too liberal and the quarter value in compensation was insufficient, tending to encourage the delay of notifying till the animal had no more value.—Dr. M. Richards had seen five cases of glanders in man, three of them quite recently in Croydon. In two of these the source of infection could not be traced.—Dr. J. McIntosh McCall mentioned the case of a stable in Glasgow where among over 100 horses only four did not react and two-thirds had no clinical symptoms, appearing in perfect health.—Dr. E. F. Willoughby referred to a case recently quoted in *Public Health* of a veterinary surgeon at Bucharest who contracted glanders through wounding his hand in a post-mortem examination. The initial local lesion was well marked and he died with intense pneumonic and pyæmic symptoms and abscesses in the muscles and all the viscera, cutaneous abscesses, and bullæ.—Mr. Hunting, in reply, mentioned a case of special interest which, taken up by Dr. T. Orme Dudfield in the press, led to the issue of the existing regulations. A girl with a young child in her arms was sitting at the door while their father was giving some medicine to a horse. The animal coughed and bespattered them with mucus and both the girls died shortly afterwards from glanders. Yet he had known of but two horse knackers in London contracting the disease though he had seen more than one cut his hands badly. But the discoverer of mallein and at least half a dozen engaged in its preparation had succumbed to the disease. The descriptions given

in text-books of glanders in man were in very few instances realised in actual practice, intra-muscular abscesses being the only constant and pathognomonic symptom.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 12th, Mr. E. Ward being in the chair.—The following cases, pathological specimens, &c., were shown. Professor A. S. F. Grünbaum: (1) An Intestinal Worm *in situ* (microscope); and (2) Spirochæta Pallida (syphilis).—Mr. W. Thompson: (1) Fibroid which prevented reduction of strangulated umbilical hernia; and (2) large Fibroid (35 pounds).—Mr. E. Solly: A large Adrenal Tumour removed by anterior incision (microscopic section).—Dr. F. S. Mackenzie: (1) Strangulated Obturator Hernia; and (2) a specimen of a Cloacal Opening in a child.—Mr. Michael A. Teale: A case of (?) Primary Melanotic Sarcoma of Caruncle of the Left Eye (slide).—Mr. H. Littlewood: (1) Extensive Growth from the Skin of the Face (patient); (2) Perforated Gastric Ulcer treated by excision and without drainage (patient and specimen); and (3) some Ovarian and Uterine Tumours.—Dr. A. G. Barrs: Pseudo Tabes and Facial Palsy following gonorrhœa.—Dr. E. F. Trevelyan: (1) A case of Wasting of the Leg of four years' duration; and (2) a case of Aphasia eight months after the onset of right hemiplegia.—Dr. A. L. Whitehead: Specimens from a series of cases of Sub-mucous Resection of the Nasal Septum.—Dr. J. B. Hellier: (1) Uterus with Myoma removed by vaginal hysterectomy; and (2) Uterus with Placenta *in situ* from a patient who died from hæmorrhage before labour.—Dr. W. H. M. Telling: (1) A specimen of Tricuspid Stenosis; (2) Chronic Nephritis with Extreme Atheroma of the Abdominal Vessels in a woman, aged 25 years; and (3) with Mr. Littlewood: Viscera from a case of Melanotic Sarcoma.—Dr T. W. Griffith: (1) A case of Charcot's Disease of the Knee-joint; (2) a case of combined Palsy of the Hypoglossal and Sixth Nerves; and (3) a specimen of Oblique Fracture from a rickety subject (dissecting room).—Mr. G. Constable Hayes: A case of Syphilitic Ulceration of the Nose simulating lupus.—Dr. Griffith read a paper based on a series of specimens illustrative of Abnormalities of the Alimentary Canal. In connexion with the closure of the vitelline duct, a passing reference was made to the comparatively common diverticulum of Meckel with its various sources of danger and the much rarer narrowing or complete interruption of the gut which might take place at this situation was discussed, with special reference to the views of Sutton and Shattock. The aberrant conditions arising in connexion with those normal diverticula, which lead to the formation of the liver and of the respiratory tract, were then discussed under the headings of abnormal diverticula and of stenoses and obliterations. An analogy was drawn between the diverticulum of the duodenum, which was sometimes found just above the orifice of the common bile-duct, and the dimple of peritoneum, sometimes forming a tube of considerable length, which may be found alongside of the obturator artery at the upper part of the thyroid foramen, or the similar depression which so often exists alongside of the external iliac vessels as they pass under Poupart's ligament, and which may become enlarged to form the sac of a femoral hernia. The former was due to the normal outgrowth which results in the formation of the ampulla of Vater and of the bile and pancreatic ducts, carrying alongside of it a pouch of duodenum, while the latter were caused by the parietal peritoneum being drawn down by the lengthening obturator and femoral vessels respectively. The diverticula of the œsophagus, due to corresponding causes, were described as being situated not close to the permanent opening into the respiratory tract—not close, that is to say, to the superior aperture of the larynx, but much further down, and the connexion of this with the manner of development of the trachea was pointed out, as was also the difficulty of discriminating between these true diverticula and those commoner ones which were caused by the traction of tuberculous glands. Of complete interruption of the gut in the neighbourhood of the orifice of the common bile duct a good specimen was shown from the body of a child who had lived only a few days. The two blind ends of the duodenum were found close together and the bile duct opened into the beginning of the distal segment. In this case there was a large meningocele with other abnormalities of the brain; the whole of the large as well as the small intestine retained its primitive peritoneal relations. The condition was suspected before the body was opened at the necropsy because, though there was imperforate anus afterwards found to be due to atresia of the rectum, the persistent vomiting which was present was not associated with abdominal distension. Dissections were then shown of a series of specimens of imperforate anus and of atresia of the rectum and the explanation of the various examples was given from the developmental point of view, reference being made to the work of Dr. F. Wood Jones.—Mr. J. F. Dobson read a paper on Retro-pharyngeal Abscess.—Mr. J. Stewart made a communication on Enucleation of a Fibro-myoma of the Uterus during the fifth month of Pregnancy; pregnancy was uninterupted.

NEWCASTLE-UPON-TYNE CLINICAL SOCIETY.—A pathological meeting of this society was held on Jan. 11th, Mr. H. B. Angus being in the chair.—Mr. Angus showed: 1. A Seven Months Extra-uterine Fœtation which he had successfully removed from a woman, aged 38 years, who had not been pregnant before. After a period of amenorrhœa she had several attacks of abdominal pain with vaginal hæmorrhage. The fœtation lay in the left side of the pelvis but whether between the layers of the broad ligament or between the latter and the meso-sigmoid could not be accurately made out. (The specimen was referred to a pathological subcommittee for further investigation.) 2. An Incomplete Tubal Abortion. 3. An Intra-peritoneal Rupture of the Gravid Tube. 4. Two specimens of Enlarged Prostate, both removed by the suprapubic route. The first patient was a man, aged 70 years. A mulberry calculus was found in the prostatic pouch. Though there was little bleeding at the operation reactionary hæmorrhage was so severe as to necessitate gauze packing. The man made a good recovery. In the second case, though the prostate was large, inviting enucleation, this was found difficult and it could only be removed in pieces. 5. A series of Vesical Calculi, the most interesting being a group of seven uric acid stones removed together with a small adenoma from the median lobe of the prostate.—Mr. John Clay showed: 1. An Epithelioma of the Pharynx from a female patient, aged 28 years, who had suffered from dysphagia for 14 years. 2. The Uterine Appendages from a patient who had acute diffuse tuberculous peritonitis. The symptoms were so sudden and severe that the peritonitis was thought to be due to the perforation of a hollow viscus. 3. A Granuloma of the Nail Bed from a patient the subject of diabetes.—Mr. G. Grey Turner exhibited: 1. Two specimens of Ectopic Gestation. The first was from a patient, aged 24 years, the mother of one child 13 months old. She was suckling and only missed one period. In the first attack of abdominal pain there was no uterine hæmorrhage but at the operation a four months fœtus was removed from the right broad ligament. In the second case the patient menstruated in November and in December she was seized with a severe abdominal illness; there was no uterine hæmorrhage. The peritoneal cavity was full of blood which came from a very small tear in the uterine end of the tube; the ovary contained a recent corpus luteum. 2. A Patent Meckel's Diverticulum excised from a baby five weeks old. The patient was nursed at home by the mother and recovered without a bad symptom. 3. A Papilloma removed from the bladder of a man, aged 44 years, whose only symptom was slight hæmaturia. The diagnosis was made with the cystoscope. 4. The parts removed by epididymectomy from a patient who had Double Tuberculous Testicles. 5. A Fibro-adenoma from the Breast. It had been present as a small lump for years and only began to enlarge during pregnancy. 6. Calculi removed simultaneously from either duct of Wharton.—Mr. W. G. Richardson showed: 1. A Kidney with a large Calculus in the Pelvis removed post mortem; the opposite organ was large and normal. Mr. Richardson pointed out that with a painless lesion one kidney might be destroyed without giving rise to symptoms so long as the other kidney was healthy. If a patient had one functional kidney only and that became diseased, symptoms at once became prominent; hence the frequency with which a single working kidney was met with in renal surgery. 2. Two examples of Prostatic Calculi removed by suprapubic cystotomy. Both were felt per rectum and by the sound and after being pushed on into the bladder were seen there by the cystoscope. In the first case the bladder was healthy and was sutured, immediately healing per primam; in the second case drainage was employed. 3. A Large Number of Small Calculi removed by Lithotrity Evacuator. 4. An Enormous Pedunculated Papilloma removed from the

Bladder. The patient had only once previously suffered from hæmaturia but operation became urgent because a process of the growth completely blocked the urethra, causing retention.—Mr. George Foggin showed a series of ophthalmic specimens: 1. An Epithelioma of the Cornea from a man, aged 62 years, who had been two years under treatment for supposed corneal ulcer. The orbit was eviscerated but recurrence took place and death ensued nine months after operation. 2. Sarcoma of the Iris from a girl, aged 15 years. Now, five years after removal of the eye, there was no recurrence. 3. Glio-sarcoma of the Retina. The patient was first seen at the age of six months but the parents refused operation; when three years old there was extreme proptosis. The orbit was eviscerated but rapid recurrence took place with sudden death four months after operation. 4. Hydatid Cyst of the Orbit removed from a child, two and a half years old. 5. An Eyeball with a Piece of Sheet Copper imbedded in it for 19 years. There was a thick bony cup surrounding the foreign body.

ROYAL ACADEMY OF MEDICINE IN IRELAND: SECTION OF PATHOLOGY.—A meeting of this section was held on Jan. 5th, Dr. J. F. O'Carroll, the President, being in the chair.—Professor E. H. Bennett showed two specimens of Fracture of the Astragalus and said that some 25 years ago he published a paper on the supposed fracture of the tubercle of the astragalus, raising the question whether it was a fracture or not or a vestige of the os trigonum tarsi. The first of the two specimens exhibited on the present occasion showed a united fracture of the same region of the bone, without doubt a fracture well and truly knit. The anterior part of the tubercle with the groove for the tendon of the long flexor of the great toe had been broken and united with the minimum degree of deformity. There was, however, no means of knowing how the fracture had been produced. The second specimen showed a fracture taking effect on that part of the head of the bone that rested on the calcaneo-scaphoid ligament, and it had not passed to any deeper extent than the cartilage.—Dr. R. Travers Smith exhibited some of the thoracic viscera of a man, aged 70 years, who had died in the Whitworth Hospital from flat-celled cancer of the œsophagus. The growth had caused a very narrow stricture and had grown by direct extension into the outer coat of the descending aorta. Numerous small secondary deposits were also found in the outer coat of the aorta and the bronchial lymph glands were cancerous. Imbedded in the wall of the left ventricle near the auriculo-ventricular groove was a secondary deposit of the size of a large hazel-nut which on microscopical examination made by Dr. H. C. Earl showed typical flat-celled arrangement. There were no metastases of the disease below the diaphragm with the exception of a cancerous deposit in a single lymph gland situated under the peritoneum on the anterior aspect of the stomach near the œsophagus and nearer the lesser curvature than the great. Dr. Travers Smith laid stress upon the frequency with which this gland was affected in internal, especially abdominal, cancer. He also spoke of the difficulty in fully explaining how the secondary deposit in this case had reached the heart.—The President said that an interesting point had been raised—namely, the dissemination backwards against the lymph stream. This must often happen also in various forms of tubercle. The particle must either have gone against the stream or else had been carried by the subclavian vein, returned by the vena cava, and going through the pulmonary system was deposited by the coronary artery in the heart.—Professor Bennett said that the same thing must occur in cancer *en cuirasse*, as the cancer certainly did not follow the lymphatic stream.—The President showed a hydrocephalic brain of a boy 17 years old, who had suffered for about six years from headaches and frequent subcomatose attacks lasting a few days. The cranium was not much larger than normal and was fully ossified. The ventricular cavities were considerably dilated but not to the degree of thinning the brain substance excessively. The greatest thinning was at the lower anterior part of the lateral ventricle where the cortex was adherent to the underlying bone. During the last couple of months of the boy's life a colourless watery fluid, recognised to be cerebro-spinal fluid, used to drip freely from time to time from the left nostril. It was evident that this discharge from the nostril came from the left ventricle by way of the adhesion of the temporo-sphenoidal lobe to the body of the sphenoid. During life the boy had been subnormal in intelligence but by no means an imbecile; he had learned to read and to write and could perform simple mental calculations. He was of average height and weight and the head was not abnormally large but the sexual organs were poorly developed. The skin, of normal texture, seemed somewhat tightly drawn over the limbs as it ordinarily is on the outside of the thigh; but there was no scleroderma. There had been no ataxy. In walking his toes caught the ground now and again and Babinski's toe-extension sign was present, while increased knee-jerk and ankle clonus were absent. There was no proof of hereditary syphilis; his birth had been instrumental.—Dr. T. G. Moorhead described a case which had been under his care and in which hydrocephalus had occurred after pyrexia, lasting for 60 days, in a man, aged 65 years. There was no obstruction to the outflow and there was increase of the subarachnoid fluid. The cerebro-spinal fluid was distinctly turbid and he cultivated the bacillus coli communis from it. He regarded the hydrocephalus as due to inflammation of the ependyma.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 17th, Mr. T. J. Dabell, the President, being in the chair.—Dr. Arthur Whitfield of King's College Hospital, London, gave an address (with lantern illustrations) entitled "The Cutaneous Manifestations of Acquired Syphilis." In introducing the subject Dr. Whitfield criticised the way in which specific eruptions were often classified according to the lesion. It was customary, perhaps, to regard syphilis as a series of causes of disease rather than as a chronic and consistent disorder, and it was much better to recognise the lesions as syphilis than to use such terms as syphilitic psoriasis. In any doubtful case of primary sore it was wiser to await the appearance of additional symptoms than to make the diagnosis of syphilis erroneously, even if it were only in 1 or 2 per cent. of the cases. It was a serious thing to put a patient under a three years' course of mercury unnecessarily, apart from the injury to his feelings and self-respect. Dealing first with the initial lesion it was shown that induration was not always marked but depended rather on the local distribution of blood-vessels. The defined, rolling edge was its most characteristic feature but it was not always possible to diagnose syphilis from this alone, for on the one hand the initial lesion might not be characteristic and on the other apparently typical sores might be followed by no other symptoms. Other early symptoms to be waited for were adenitis and, most characteristic of all, an indurated lymphangitis on the dorsum penis, often bifurcating at its root. Proceeding to the earlier rashes, the usual characteristics of these were pointed out, to be their generalisation, superficial site, multiformity, and absence of grouping, but these had exceptions. Illustrations were shown of the large papular, giant papular, small papular, follicular, corymbose, scaly, and bullous varieties, and attention was drawn to the histological basis of these various lesions. Passing to the early relapsing eruptions these were shown to be grouped, extending more deeply and less generalised but still usually symmetrical. Striking examples were shown of the psoriasiform and late corymbose conditions with atrophy of the centres of the patches and their histology was illustrated. Among the later rashes were shown a papular one with tendency to overgrowth, the cutaneous or grouped gumma, the late palmar and plantar syphilide with hypertrophy, and the large non-grouped subcutaneous gumma. The effect of syphilis on the skin of seborrhœic subjects was also explained. One of the most important points in treatment was never at any stage to overdose the patient with mercury, which, if it occurred, nearly always meant that the case became more resistant to treatment ever afterwards. Follicular eruptions were as a rule obstinate cases to treat. As the disease became older the potency of local treatment increased, while that of constitutional treatment diminished. An instance was given of a late palmar syphilide which after resisting all forms of mercury and iodide yielded satisfactorily to the x rays.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 11th, the President, Dr. H. W. Syers, being in the chair.—Dr. W. R. Dakin read a paper entitled, "Do we Teach our Students Midwifery?" He began his paper by laying before the society some of the statistics available on the results of midwifery practice in this country, contrasting the death-rate in the lying-in hospitals with those obtained in private practice. He pointed out the striking results

obtained when antiseptic principles were first observed in lying-in hospitals, instancing the reduction in mortality by Semmelweis from 12 to 2 or 3 per cent. He further pointed out that at the General Lying-in Hospital, York-road, during the last 16 or 17 years no case of blood poisoning occurred which had started there. He then proceeded to show that the mortality from septic puerperal disease in the years 1886 to 1890 was 2·4 per 1000 births; during the period 1890 to 1895, 2·5; 1896 to 1900, 2·0; and in the single years 1901, 1902, and 1903 it was 2·2, 2·1, and 1·75 respectively. The numbers were, however, no better than in 1876 to 1880 as regards deaths from sepsis and were worse as regards total mortality. He considered that the medical men were responsible for the failure to improve. The two main causes of septicæmia were: first, that there were some medical men who did not know how to practise midwifery; and secondly, that asepsis was by a large number of medical men not considered a matter to be taken seriously in midwifery practice, although they believed that in surgery it was a vital element. The weak point was that the practice of the younger men was not devoid of septicæmia, although they had been inculcated from the very first moment in all the details of asepsis. Dr. Dakin blamed the way in which the student got his smattering of midwifery and held that the so-called practical work was simply a farce. He pointed out further the slight esteem in which the subject of midwifery was held by the examining boards, inasmuch as the student was supposed to get up the whole subject in little more than 30 lectures and could have done with it at the end of his fourth year. The student was left to obtain his practical knowledge unattended or having the services only of a qualified senior student to assist him. It might be said that independent charge of cases in this way was likely to engender habits of self-reliance, but if self-reliance was acquired on a basis of ignorance the result could only be disaster. The student should be thoroughly taught to know natural and unnatural conditions when he saw them and to conduct normal or any other labour aseptically. Dr. Dakin contrasted the much better methods prevalent in Germany, where the student was required to attend two and a half years' course regularly in a lying-in hospital and personally to have delivered four women in the presence of the teacher or the assistant physician. He urged the establishment of a large lying in hospital. The rule would then be that a student before admission to the qualifying examination in midwifery in his fifth year, and, in fact, at the same stage as that at which he took his medicine and surgery examinations, should have attended regularly the practice of the lying in hospital (to be established) for at least eight months and have personally delivered and subsequently attended 30 cases of labour in the following way: five cases must have been attended in the hospital under the teacher; during the time in which the labours of these five occurred he would reside in the hospital; he would have to make all the necessary examinations, abdominal and vaginal, and perform all the manipulations of delivery under the supervision of the teacher there. He would make full notes in each case, in a manner satisfactory to the teacher, of the patient's previous history, of the pregnancy, labour, and lying-in period, and of the progress of the child. The remainder of the 30 cases might be attended outside the hospital, preferably in the outdoor maternity of his own hospital. He would be still under the control of a teacher and would keep full notes of each case as before. Further, this practical midwifery work should be taken in his fifth year and not less than two years after passing his second examination. He would then appreciate something of what he was learning and he would go up for his medicine, surgery, and midwifery, which three subjects he would certainly have to practise simultaneously, at the end of his fifth year. Dr. Dakin then gave a sketch of the details of such a lying-in hospital.—The paper was discussed by Dr. G. F. Blacker, Dr. R. Hamilton Bell, and Dr. W. A. Malcolm.—A vote of thanks to Dr. Dakin closed the proceedings.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Jan. 16th, Dr. J. Barry Ball, the President, being in the chair.—Dr. T. Vincent Dickinson read a paper on Periodic Vomiting with Acetonæmia in Children. He said that this disease presented the following clinical picture. In the midst of perfect health without apparent or appreciable cause or error in diet or derangement of intestinal action the child, who was usually of a nervous or arthritic diathesis, was suddenly seized with vomiting. This vomiting was produced by regurgitation without premonitory nausea as in tuberculous meningitis. The vomited matter, usually watery, was at first abundant and then diminished until the stomach was empty. Attacks occurred several times a day either spontaneously or excited by movement. The usual duration was from two to four or five days, and once at an end health was re-established immediately. During the attack there were much prostration, a clear tongue, constipation, and retracted abdomen; the pulse and temperature were slightly raised; the breath smelt of acetone, which was always found in the urine at some period of the attack. The cause had been variously attributed to the arthritic diathesis, hyperacidity of the gastric juice, faulty metabolism producing diacetic and oxybutyric acids, or xanthin and paraxanthin, or as a manifestation allied to migraine. Two theories lately brought forward were (1) that of Richardière, insufficient function of the liver which in some cases is enlarged; and (2) that of Broca, latent appendicitis. The latest statistics by Comby of 34 cases show that in two only was the appendix implicated; 24 were girls and ten were boys, the average age being from two to ten years. There was enlarged liver in two cases; jaundice was rare; there was constipation in 30 cases; six were afebrile. These cases were met with in children of a neuro-arthritic diathesis and among the richer classes. Prognosis was almost always favourable. The treatment, founded on the idea of its being an acid intoxication, consisted in giving bicarbonate of soda in large doses, 15 grains every two hours. Edsall and Pierson claimed to have cut short the attacks by this, while Shaw and Tribe state that the vomiting itself seemed to have been more marked while taking it, although their case recovered. Griffith gave phosphate of soda without marked success, and Morgan states that morphine injections allay the vomiting and gives alkalies in some form combined with bromide of sodium. Rectal feeding and massage have their uses, and between the attacks the diet and bowels should be regulated and the general condition improved by hydrotherapy, exercises, and fresh air.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 19th, Mr. W. Campbell McDonnell, the President, being in the chair.—Dr. David Ross showed a case of Chronic Hydrocephalus following Cerebro-spinal Meningitis. A male child, aged three months, was vaccinated by him and a week later had convulsions which lasted about two weeks. He lapsed into a state of stupor and was apparently blind. Kernig's sign was present. On the face, the upper arms, and the chest there appeared bluish-red spots, likened to flea-bites by the friends. The bowels were constipated, wasting was rapid and great, and he screamed almost incessantly. The retraction of the head was so great that the friends thought the neck would break. For nine months the wasting continued until the child was almost a skeleton, then he gradually began to recover, and is now a fine plump child of two years. He sees and hears well and talks a little. The head is very large and heavy but the fontanelles are closed. He moves his legs freely but has no idea of walking or standing alone. Heubner described a chronic form of cerebro-spinal meningitis which might be protracted for from two to five or even six months, and might cause the most intense marasmus. It was not impossible that these protracted cases depended upon chronic hydrocephalus or abscesses of the brain. Lenhartz of Hamburg had observed 45 cases in ten years and was convinced that the best treatment was early and protracted lumbar puncture. For retraction of the head Dr. A. Morison said he had introduced an "occipital hammock" to sling up the child's head and he found that this made a child more comfortable and kept him quieter.—Dr. L. Durno showed a healthy Appendix ten and a quarter inches in length which he had removed from a man, aged 49 years, who had died from chronic alcoholism.—The President showed an eight months' Male Fœtus with the following congenital defects: hare-lip, lumbar spina bifida, club hands with absence of the left thumb, club feet, large hernia into the cord, and cyst of the cord. He also showed a photograph and two skiagrams.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Jan. 17th, Professor J. Lorrain Smith being in the chair.—Dr. Cuthbert Lockyer of London gave a lantern demonstration on the Development and Retrogression of the Corpus Luteum. The lecturer

pointed out that the majority of pathological processes associated with lutein tissue were not the outcome of changes in the corpus luteum itself but arose during the developmental stages of the Graafian follicle—i.e., before that body attained anything like its full maturity. In this way the different types of lutein cysts, also lutein hæmatomata, and even lutein abscess and calcification have, as a rule, nothing to do with the yellow body. Such changes take their origin for the most part in atresic follicles which have acquired a lutein lamina before undergoing retrogression. Mention was especially made of the type of lutein cysts which the lecturer described as "composite lutein cystomata"—large tumours, that is, which he had only found in association with vesicular mole and chorio-epithelioma. The actual causation of this peculiar type of lutein excess was still obscure but its relationship to the ovular changes could scarcely be accidental, nor did the speaker think they were secondary as did the German authority Gottschalk. The fascinating theory that lutein excess accounted for trophoblastic overgrowth had occupied Dr. Lockyer's close attention, but control investigations on ovaries from cases of normal gestation and chorio-epithelioma failed to convince him that excess of lutein tissue was peculiar to vesicular disease and chorio-epithelioma. Another difficulty which stood in the way was the possible confusion of displaced lutein tissue and decidual reaction in the ovarian stroma, and the lecturer threw out the suggestion that the lutein cell and the decidual cell were histogenetically one.—Professor R. Favell (Sheffield) showed a Uterus and Ovaries, the former containing a hydatid mole and the latter lutein cysts.—Dr. C. Oldfield (Leeds) showed a specimen with Double Lutein Cysts and Chorio-epithelioma of the Uterus.—Other preparations were shown as card specimens.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held at Manchester on Jan. 19th, when the following office-bearers were elected. President: Mr. R. Favell. Vice-Presidents: Sir William J. Sinclair, Dr. D. Lloyd Roberts, Mr. Owen Bowen, Dr. Arthur J. Wallace, Dr. J. Braithwaite, Dr. C. J. Wright, Dr. John W. Martin, and Mr. Percival E. Barber. Honorary treasurer: Dr. E. Octavius Croft. Honorary general secretary: Dr. W. E. Fothergill.—A valedictory address on the Evolution of Operative Gynæcology was then delivered by Dr. Lloyd Roberts, the retiring President, which is published at p. 207 of this issue of THE LANCET.—Dr. J. B. Hellier showed a Pelvis deformed as the result of Infantile Paralysis. There was deficient development of the os innominatum of the paralysed side and the normal flattening which takes place between birth and maturity was exaggerated on the sound side, on which extra weight had been thrown. There was a difference of half an inch between the oblique diameters at the brim. The outlet was much contracted, the ischial spines being three and a quarter inches apart, while the tip of the coccyx was within one and three-quarter inches of the symphysis and deviated three-quarters of an inch to the right.—The usual dinner was held at the Queen's Hotel, Mr. Favell being in the chair.

Reviews and Notices of Books.

Die Anatomie der Taubstummheit. (The Anatomy of Deaf-mutism.) Published in the Proceedings of the German Otological Society. First part. Contents: I. SIEBENMANN, Malformations of the Ossicles and Fenestræ; Collapse of the Ductus Cochlearis, all three walls of which show signs of progressive dilatation. With five Figures in Tables I. and II. II. WATSUJI, Histological Researches on Deaf-mutism. With three Figures in Table III. III. POLITZER, The Anatomical Condition of the Organs of Hearing in a Deaf and Dumb Patient, with six Figures in Table IV. With four Tables. Wiesbaden: J. F. Bergmann. 1904. Pp. 20. Price 5*s.* 6*d.*

IT appears that the inception of this work was due to some remarks made by Professor Arthur Hartmann of Berlin in 1903 at the German Otological Society, when he justly said that few had any knowledge of the auditory apparatus of deaf-mutes, and it was with a view to a more general extension and distribution of such knowledge that this book was published. It will be welcomed by all earnest students in otology and pathology and it is much to be desired that a work of such importance should be rendered into English. In this, the first part, Professor Siebenmann, Dr. Watsuji, and Professor Politzer are the contributors.

Professor Siebenmann's contribution to this part consists in a detailed description of the pathological conditions found in the case of a man who died when 53 years of age. He had been born deaf although there was a slight appreciation of speech. On the left side the following macroscopical conditions were observed. The meatus and the drum were normal. In the middle ear the long process of the incus was of normal thickness and strength, exceeding the normal by 2 millimetres in length. The posterior limb of the stapes was firmly bound down by scar tissue and the capsule of the inco-stapedial joint was connected with the fibrous sheath of the facial nerve. The posterior limb of the stapes was thick and long, the capitelum was markedly stronger than usual, and the foot plate was much thickened. The articular cartilages were atrophied, with a tendency towards rarefaction of the ossicles and the round window was very much diminished in size. The labyrinth was particularly rich in pigment. There were numerous changes in the posterior half of the membranous labyrinth. The bony divisions in the cochlea were thin. In the upper part of the modiolus the bone was absent. The changes in the nervous apparatus were also of great importance but space does not admit of a full description. This case is illustrated by two plates consisting of five figures. The first is a section from the malleus and incus, showing thickening of the bones and the connexion between the long process of the incus, the stapes, and the sheath of the facial nerve. Fig. 2 is a micro-photograph of the cochlea, showing the want of development in the organ of Corti.

The histological study of deaf-mutism is the contribution by Dr. Watsuji. The preparations were made from the ears of a patient who died at the age of 41 years. This was a case in which it was impossible to determine from the patient's statements whether the defect was congenital or acquired. His wife was a deaf-mute but his children had normal hearing. In this case in both ears, with the exception of narrowing of one of the semicircular canals, the chief changes were found in the cochlea. The description is illustrated by three plates of exquisite workmanship.

Professor Politzer's contribution is quite short compared with the last mentioned. Here also the changes were most marked in the cochlea. The illustrations of microscopical sections in this instance are most beautiful.

The earliest work with which we are acquainted which is of really scientific value in connexion with this most abstruse and interesting abnormal condition is that by Mr. Cock, the well-known surgeon of Guy's Hospital, who made a large number of dissections in the early part of the last century. His contribution to the science was necessarily macroscopic but in all his cases the prominent feature was the non-development, or obstruction by bony growth, of the semicircular canals. This does not appear to have occurred or to have been noticed in these three cases and if it was not noticed by such observers we may justifiably assume that it did not exist.

It is, however, somewhat to be regretted that no very detailed description is given of the *absolute* state of hearing, or the remnant of hearing, with the exception of that by Dr. Watsuji, from which we learn that bone conduction for the watch was present but no vocal sound whatever was heard. There was a slight perception of Galton's whistle and the patient was able to hear C (of 128 vibrations) by bone conduction on the right side. This in itself is an extremely interesting observation, though the maximum of hearing with what may be termed the better ear was only seven seconds. Here we meet immediately with a difficulty, a difficulty

which meets us in all hearing tests, and that is, that the weight of the blow of any tuning fork is not a universal standard, and so we are in England no wiser than if the author had merely stated "perception of sound."

This work emphasises the high pitch of excellence to which otology has advanced amongst the German-speaking races and the freedom from petty jealousies which enables men of such world-wide repute to work together for the advancement of their specialty. The three authors are deserving of high praise; they have produced the first part of a series which, we are convinced, will form a standard on the subject.

The Vermiform Appendix and its Diseases. By HOWARD A. KELLY, A.B., M.D., Professor of Gynæcology in the Johns Hopkins University, Baltimore; and E. HURDON, M.D., Assistant in Gynæcology in the Johns Hopkins University, Baltimore. With 399 original illustrations, some in colour, and three lithographic plates. London and Philadelphia: W. B. Saunders and Co. 1905. Pp. 827. Price 42*s.* net.

WE think it will be long before any larger work than this on the appendix will appear. The volume before us has more than 800 pages and about half as many illustrations and we may add that it weighs some seven pounds. Clearly no exertion on the part of the authors and no expense on the part of the publishers have been spared to make this the fullest and most thorough work on the subject. No one can complain that the authors have taken too narrow a view of their task, for they have devoted more than 50 pages to the history of the subject. They have given nearly 150 pages to the anatomy of the appendix and the other departments of the subject have been equally generously treated. Even the medico-legal aspects of appendicitis have not been forgotten. To describe more particularly one division, we may mention the contents of the anatomical section. The embryology of the appendix is first described and numerous illustrations of the embryo are given at various ages from six weeks to seven months and a series of diagrams shows that the appendix is a retrogressive organ, as at first it is merely the distal portion of the cæcum but fails to maintain the same degree of development as the rest of that portion of the colon, so that ultimately its calibre is far less. An account of the comparative anatomy of the cæcum is then given and the authors show the enormous variations in form which occur even amongst the mammalia. Comparatively few animals are favoured with the possession of an appendix cæci and man is one of them. The next point of the anatomy dealt with comprises the peritoneal folds of the cæcum and their importance is maintained. The variations of the meso-appendix are described and the varieties of the supplying arteries. The arrangement of the ileo-cæcal region and its valves is also discussed. Then comes an account of the possible points of origin of the appendix and the directions which it may take. The very great variations in the position of the appendix are often of the greatest importance to the surgeon. The length and the structure of the organ, both naked eye and microscopical, are fully dealt with. The accounts of the blood-supply, the lymphatics, and the nerves occupy a chapter to themselves.

We have said enough to indicate the very elaborate scale on which the book is written and we may add that the authors are careful to give credit to whom it is due. Quotations from other writers are freely given and in many cases these are in the original language in which they were written. We have nothing but praise for the work as a whole; here and there there are points where we might feel inclined to differ from the views expressed by the authors but in nearly every portion of the subject opinion is in a state of flux and the views held to-day may differ widely from those prevalent to-morrow. The work is especially suited to physicians or surgeons who wish to have in one volume the essence of all that has ever been written about the appendix, and though it is too voluminous for the busy general practitioner yet anyone who can spare the time even to dip into its pages will find himself well repaid by the pleasant style and the interesting facts therein contained. The authors evidently contemplate a second edition as they tell us that it will contain a fuller account of leucocytosis in relation to appendicitis.

The Book of Prescriptions (Beasley) with an Index of Diseases and Remedies. Rewritten by E. W. LUCAS, F.I.C., F.C.S., late Examiner to the Pharmaceutical Society of Great Britain. With an introduction by ARTHUR C. LATHAM, M.A., M.D. Oxon., F.R.C.P. Lond., Senior Assistant Physician at St. George's Hospital and Assistant Physician at the Brompton Hospital for Consumption. Eighth edition. London: J. and A. Churchill. 1905 Pp. 366. Price 5*s.*

THE fact that this publication has reached an eighth edition is sufficient proof that it has been duly appreciated. The book contains an excellent series of prescriptions illustrating the employment of the materia medica in general use. It also comprises notes on the pharmacology and therapeutics of the principal drugs and the doses of their preparations. The quantities of the various medicaments employed are expressed according to the imperial system, but the practical equivalents according to the metric system are also given.

As Dr. Latham states in the introduction, medical students of the present day have seldom mastered the difficult art of prescribing at the time at which they obtain their qualification to practise. In consequence of this defect in the medical training the qualified man starts on his career imperfectly informed in a necessary part of his professional duties. He has to learn laboriously when his opportunities may be few and in certain instances he may be tempted to rely too much on various proprietary mixtures. Further, whilst in hospital he generally sees prescriptions written according to certain titles, such as "haust. gent. alk.," "haust. ferri c. mag.," but if questioned as to the ingredients of such mixtures he may fail to give a correct answer. A work of the kind that we are considering, if properly used, helps to remedy such defects, and a study of the numerous prescriptions which are given should prove of the greatest service to the young practitioner. Every drug in common use is included in the present edition; in considering each one the physical and chemical characteristics of the various preparations are mentioned. The therapeutical and medicinal values are precisely indicated and the doses, as we have already remarked, are stated according to both the imperial and the metric systems. The various prescriptions are accurate and trustworthy. We can recommend this manual to senior students and practitioners as a useful adjunct to the ordinary text-books on medicine.

Report on Sanitary Measures in India in 1903-04. Vol. XXXVII. London: Printed for His Majesty's Stationery Office by Darling and Son. 1905. Pp. 203. Price 1*s.* 8*d.*

THIS report is prepared for presentation to Parliament. It contains chapters on the health of the European and native troops, on the health of prisoners in jails, and on the health of the general population; it also contains chapters on vaccination, on medical institutions, including medical schools and lunatic asylums, and a chapter on sanitary works. Appended to the report are abstracts of reports by the principal Sanitary Commissioners in India and memoranda by the Army Sanitary Commission in England reviewing the several sanitary reports for India. The report shows that there was a marked improvement in the health of the European troops serving in India during the year 1903; the daily sick and invaliding rates were much lower than in the previous year and the death-rate improved.

On an average strength of 70,445 the admissions into hospital were in the ratio of 1033 per 1000, against 1078 in 1902; the daily sick-rate fell from 66 to 63. The invaliding ratio (29) was lower by 8 per 1000, so that the total loss by death and invaliding was equal to 42 per 1000, a decrease of 10 per 1000 on the previous year. Madras and Burma had the highest sick-rates and Bengal and Burma the highest death-rates. The chief causes of sickness in the whole European army were venereal diseases and ague, the former yielding a ratio of 247 per 1000 against 281 in 1902 and the latter 243 per 1000 against 247. 47 per cent. of the total sickness resulted from these two causes. Enteric fever, as usual, was the chief cause of mortality, the death rate being slightly lower than the ratio of the previous year. Cholera was very prevalent and among the European troops 81 cases were recorded with 57 deaths. Among the European troops in India there were during the year 68 cases of small-pox with eight deaths. Enteric fever was more prevalent than in the previous year. There were 12 cases of plague among the European troops and two deaths. Venereal diseases ranked first in the list of causes of admission to hospital and first in the causes of invaliding. They were the cause of nearly 24 per cent. of the total sickness during 1903 and of 10¼ per cent. of the invaliding of the European army Venereal diseases were ten times more prevalent among the European troops than among their comrades of the native army. The Gurkhas invariably suffer in a much higher degree than the rest of the native troops.

The health of the native army during 1903 was exceptionally good. The admission and constantly sick rates were the lowest on record and the death-rate was lower than in any previous year. The chief cause of sickness in the native army was ague. Pneumonia was, as usual, the chief cause of death. From cholera there were 80 deaths in the native army and there were 184 cases of plague with 115 deaths. As regards the general population, the health of the people was less satisfactory chiefly owing to the prevalence of cholera and plague. Malarial fever was less prevalent than in the preceding year, but nearly twice as many deaths were recorded from plague as in 1902. The Punjab was the unhealthiest province in India in 1903. The health statistics of the jails show a further satisfactory improvement in the health of the prisoners. Vaccination is steadily being advanced, there being an increase of 25,734 operations on the number of the previous year. With regard to sanitation, in Calcutta substantial progress was made during the year in ridding the city of many objectionable and insanitary collections of native huts, resulting in the opening up of many unhealthy areas by the construction of public squares. In the Punjab good progress was made during the year in the important works which have been undertaken for the improvement of the sanitation of Simla and in the waterworks of Amritsar city. In Madras city progress was made with the new drainage scheme and in Bombay city progress was made with the special drainage works. In the report the question of the prophylaxis of malarial fevers is discussed as a whole in "General Remarks" (p. 122). There can be no doubt that the efforts put forth during the year under notice have been far more general, more complete, more consistently and energetically maintained, and better organised than heretofore. At the same time, signs are not wanting that in many respects the work of prophylaxis has yet to be developed in its range and in completeness before measurable results can be hoped for.

LIBRARY TABLE.

The Source of the Blue Nile. By ARTHUR J. HAYES, L.S.A. Lond. London: Smith, Elder, and Co. 1905. Pp. 315. Price 10*s.* 6*d.* net.—Mr. Hayes was the medical officer of a survey party which was despatched to make observations as to the annual rise of the Blue Nile in connexion with the works for the great Assuan dam. The Blue Nile rises in Lake Tsana which is in Abyssinia. Thither Mr. Hayes and his companions wended their way, starting from Khartoum and returning by way of the Atbara valley. Mr. Hayes has written a pleasant and chatty description of the expedition. He is evidently not an experienced traveller but he is observant. Thus he notes with somewhat naïve astonishment (p. 61) some ordinary "pot holes" in the bed of the Geerar river. Where his own information or knowledge is deficient he supplements it in modest and praiseworthy fashion from that gathered by other travellers. With these qualifications Mr. Hayes should one day produce a book of value if his lot should again lead him into out-of-the-way places. With regard to the vexed question as to whether birds of prey, especially vultures, are attracted by sight or smell, Mr. Hayes says that his observations agree with those of Sir Samuel Baker, from whose book, "The Nile Tributaries of Abyssinia," he gives a long quotation. Baker thought that sight was the sense which played the principal part. Readers of Waterton's delightful essays will recollect that that eminent but obstinate traveller came to exactly the opposite conclusion in his controversy with Audubon. In THE LANCET of Sept. 9th, 1899, we commented, under the heading of "An African Mystery," upon a curious experience undergone by Captain Welby, whose early death was a great loss to scientific geography. Welby was travelling through the Walamo country which lies to the south of Adis Abeba which again lies some way to the south of Lake Tsana. A curious kind of demoniacal possession afflicted those who travelled in the country and this was specially prone to happen if the traveller took any food while the Walamo were looking at him. Welby as an avowed disbeliever tried the experiment and the next day he says "I felt thoroughly ill." Mr. Hayes came across a somewhat similar belief at the village of Bahrdur Georgis (St. George is a famous saint in Abyssinia), which lies just at the exit of the Blue Nile from the lake. In this village any person of rank is carefully shielded from view while he eats or drinks in order to protect him from the evil eye. The book is illustrated with excellent reproductions of photographs and has an appendix containing a note upon the religion and customs of Abyssinia, the information in which has been mainly collated from the works of previous travellers. An interesting description is given of a disease allied to demoniacal possession which is known by the name of *bouda*. Altogether the book is well worth reading but we hope that when the next edition appears an index will be provided.

A Guide to Diabetic Cookery. Published by Callard and Co. Price 1*s.*—To arrange a suitable diet table for a diabetic patient which shall offer sufficient variety to tempt the appetite while not transgressing the limits laid down by the physician needs a considerable knowledge of cookery as well as of medicine. This little book should prove very useful to those who have to undertake the management of such a case. A large variety of recipes are given, embracing soups, meats and savouries, puddings, and so on, all made from ingredients which are permitted to diabetic patients. Some doubt may perhaps arise as to the advisability of using any considerable quantities of glycerine for diabetic cookery in view of Luthje's experiments, but probably the small amounts necessary for sweetening would do no harm in ordinary cases.

On Active Service with the St. John Ambulance Brigade (South African War, 1899-1902). By the late WILLIAM S. INDER. Demy 8vo, with 25 illustrations. London: Dale, Reynolds, and Co. 1905. Pp. 318. Price 5*s.*—The author of this book was the late Sergeant W. S. Inder of the Kendal

Division of the St. John Ambulance Brigade. The chief attraction of the volume is the clear account of many of the chief incidents of the South African campaign, but the book contains much good-humoured gossip about the St. John Ambulance Brigade, Scottish Horse, and Active Service Volunteers which will be read by many with considerable pleasure. It is a brightly written narrative of a faithful man's work and it brings the scenes passed through vividly before the reader. The sketches of scenes among the field hospitals afford realistic pictures of the medical side of the war. The author went out to South Africa in December, 1899, on the s.s. *Simla*, and landed in time to help to look after the wounded Highlanders after Magersfontein. He was evidently a keen and capable ambulance man, deservedly popular with all the staff, and his diary is written with a literary skill much above the average. Throughout the book we are brought face to face with a kind, sympathetic, and loveable nature, and we realise that it was such men as he who made the St. John Ambulance orderly so much appreciated in South Africa. We recommend the book to the notice of those who are interested in the history of the war and specially to those who work for the St. John Ambulance Association.

The Nursing of Sick Children. By JAMES BURNET, M.D. Edin., M.R.C.P. Edin., Registrar and Assistant to the Extra-Physicians, Royal Hospital for Sick Children, Edinburgh. London: The Scientific Press. 1905. Pp. 66. Price 1*s.* net.—These pages are intended to serve merely as an introduction to this subject. The author hopes that a careful perusal of this handbook will supply to a certain extent the want of special training in children's ailments in nurses who have had but little opportunity afforded them of acquiring a knowledge in children's wards. Nurses, however, who are devoting their attention specially to children will doubtless find the information contained in this book helpful. The recommendations are quite sound; they are at the same time simple and capable of being easily understood. The information has evidently been carefully put together, the directions are explicit, and but little is left to the nurse's imagination. We regard it as a helpful little manual.

Guy's Hospital Nursing Guide: Handbook of Nurses' League and Register of Nurses Trained at Guy's Hospital. Third issue. London: Ash and Co. 1905. Pp. 150. Price 1*s.* 6*d.*—The original object in view in the preparation of this work was simply to provide a handbook of the Nurses' League of Guy's Hospital and a register of the nurses trained at that institution. In the course of preparation the desirability was recognised of including a section which would be of general service to the community. The first part of the book contains a nursing guide which we can recommend as a trustworthy source of information to those who are thinking of entering upon the work of nursing. Those who are attracted to this work will here find advice and knowledge which will enable them to form a just opinion of what is before them during their careers. The register of the nurses is as useful and comprehensive as in the former issues of this book.

Cattle Tuberculosis By HAROLD SESSIONS, F.R.C.V.S., F.H.A.S., F.R.G.S. Second edition. London: Baillière, Tindall, and Cox. 1905. Pp. 130. Price 2*s.* net.—This brochure is intended as a practical guide to the agriculturist and meat inspector and quite fulfils its object, as it gives in a concise and practical manner an up-to-date aspect of the latest theories and practical facts in connexion with tuberculosis in cattle. It is a little book which we can thoroughly recommend to the favourable notice not only of the practitioner but of every medical officer of health. It deals thoroughly with the cases of tuberculosis, not only of cattle but of the human being, and one chapter is devoted to a comparison between human tuberculosis and that of bovines, statistics being given in tabular form to illustrate various points. The origin of the disease, the symptoms and diagnosis, and the use of tuberculin as a means of detection and prevention are clearly discussed, as are also the regulations dealing with milk and meat. In the chapter on the disposal of affected carcasses Mr. Sessions quotes the methods which are employed in foreign countries and particularly lays stress on the sterilisation method which is so satisfactorily carried out on the continent. The book is well got up and we are sure that it will find a ready sale.

The Animal Parasites of Man. By Dr MAX BRAUN. Third edition, with 294 illustrations. Translated by PAULINE FALCKE and brought up to date by LOUIS SAMBON, M.D. Naples, and FRED. V. THEOBALD, M.A. London: Bale, Sons, and Danielsson. 1906. Pp. 453. Price 21*s.* net.—Braun's work on human parasites is well known in Germany, in which country it has reached a third edition, and the translators have certainly done a service to the English-speaking profession in bringing it within the reach of all in this country who are interested in parasitology. In the present day the study of parasites has become such an essential feature, especially to those whose work takes them to tropical countries, that it might almost be said to have become a specialised science. It would be almost invidious to pick out any particular chapter as all are of the utmost interest, but we may legitimately be pardoned for particularly drawing attention to the illustrations and descriptions of the mosquito. However, every part of the book is full of interest and it quite fulfils the purpose for which it is said to be destined—viz., a handbook for students and medical men.

Essentials of Physiology for Veterinary Students. By D. NOEL PATON, M.D., B.Sc. Edin., F.R.C.P. Edin. Illustrated. Edinburgh: William Green and Sons. 1905. Pp. 428.—There are many points of difference between the physiology of man and of lower animals and it is quite necessary that the veterinary student should be taught specially and not be allowed to gain his knowledge merely from a medical text-book. Dr. Paton, who at one time occupied the chair of physiology in the Royal Veterinary College, Edinburgh, and who is at the present time one of the examiners of the Royal College of Veterinary Surgeons, has endeavoured in as concise a manner as possible to place together the essentials of the general and special physiology of the domesticated animals in a form suitable to the requirements of students and practitioners of veterinary medicine. The general aspect of physiology is deeply entered into and no efforts are left undone to make it easily understandable and complete, and the special aspect, as it applies to the various domesticated animals, has been touched upon, although not quite so fully perhaps as the student of veterinary physiology could have desired. Many of the plates, too, are of the human organs and would be better if taken from the animals themselves, but probably this side will receive more attention when the book reaches, as we are sure it will, a second edition. The book is a useful one and will form a welcome addition to the veterinary student's library.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—This magazine opens the new year with an excellent number. It contains two articles of interest upon the tuberculosis question—one by Dr. R. W. Philip on the Erection of Municipal Dispensaries and another by Dr. John Robertson on Prevention of the Disease by Means of Notification along with the provision of sanatoriums and homes for consumptives. A preliminary communication by Dr. J. Eason deals with the pathology of paroxysmal hæmoglobinuria and attributes the phenomena of this condition to the presence of a special hæmolytic amboceptor in the serum. Mr. H. Alexis Thomson records the notes of four cases—three of malignant disease and one

which subsequently proved to be a papilloma—treated with Doyen's serum, apparently without good results. Mr. H. Harvey Littlejohn and Mr. T. W. Drinkwater deal with poisoning with arsenious acid, calling attention to the occurrence of yellow sulphide of arsenic in the alimentary canal.

The Scottish Medical and Surgical Journal (January).—Professor John Chiene, the retiring president of the Medico-Chirurgical Society of Edinburgh, in a valedictory address deals with the history of the society during the past 50 years. Dr. B. P. Watson publishes the results of some experiments on rabbits to elucidate the effects of withdrawal of the liquor amnii, which is followed by death of the fœtus and degenerative changes in the placenta; the latter closely correspond with those described by Eden in the retained human placenta. Dr. David H. Stirling gives some statistics of results obtained at a sanatorium for tuberculosis and Mr. H. M. W. Gray comments on a variety of surgical conditions, especially dealing with the use of vaccines in surgical cases.

The West London Medical Journal (January).—This number opens with two short papers on climatic subjects, the first by Dr. S. A. Bontor dealing with Jamaica as a Health Resort and the second by Dr. W. S. Colman with some French Health Resorts. Dr. A. P. Beddard gives an account of recent work on the Opsonic Powers of the Blood and manages to make this rather difficult matter intelligible to those who have not previously studied the question. Dr. D. G. A. Chowry-Muthu sets forth his belief that static electricity is of value in the treatment of pulmonary tuberculosis.

The Medical Chronicle (December, 1905).—In this number Professor W. Stirling's article on Coöperation and Adaptation in Digestion is concluded. The second part deals with modern work and points out the two kinds of stimuli which give rise to secretion of digestive juices, the hormones or chemical excitants acting slowly and continuously, and the nervous impulses acting quickly. Mr. E. D. Telford records a case of Umbilical Hernia in which perforation of the small intestine in the sac was caused by the presence of a piece of rabbit's bone.

New Inventions.

THE EQUIPOISE BED, COUCH, AND CARRYING CHAIR.

AT the Institute of Hygiene, 34, Devonshire-street, London, W., a bed of ingenious construction is on exhibition, which has been brought out by the Equipose Couch Co., Ashford, Kent. The mechanism is that of a ratchet wheel and pawl with crank-handle attachment, enabling the top part of the bed to be manipulated and fixed at any angle required. When the desired position has been reached it can be there retained for so long a time as is necessary. The mechanism works so smoothly that the position of the patient's head and shoulders, however helpless or heavy he may be, can be changed as often as wished for and without the slightest difficulty by the nurse or attendant. If the patient is able to use his arms he can easily adjust himself to whatever position he wishes with the smallest possible exertion. If, on the other hand, he is suffering from acute heart disease or from a malady in which any exertion is dangerous the nurse can alter his posture so easily that he is scarcely conscious of movement. Another advantage claimed for the bed is that the bottom can be dropped, an arrangement which provides a double inclined plane, thus affording relief to the thighs and the legs. The bed is intended for the use of invalids and should serve its purpose well. The illustrations represent two of the many positions which may be given to the bed. The price is five and a half guineas. It may be upholstered in imitation leather, tapestry, or morocco at an additional charge, and handles are supplied for use when the bed is carried about with a patient lying on it. Chairs, couches, and surgery

FIG. 1.

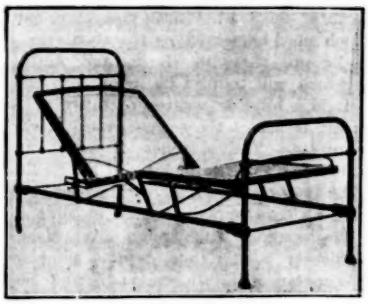

FIG. 2.

chairs are constructed by the Equipoise Co. upon the same principle but none of these were on exhibition.

AN ASEPTIC EAR OR WOUND SYRINGE.

THE defect of most piston and other syringes which are filled through the nozzle is the great difficulty of keeping them "surgically" clean. The instrument shown in the illustration, however, since its parts are made entirely of metal and readily separated, can be easily sterilised. Further, its makers have, at my suggestion, added a nozzle which, being detachable, not only enables the syringe to be filled without risk of contaminating its interior through an infected aperture but also facilitates the cleaning of the nozzle itself, precautions of the utmost importance in aural treatment. In use the syringe is filled with fluid through the fixed nozzle, after which the detachable nozzle shown at the side is slipped over the fixed one and the fluid is ejected in the ordinary way. Before refilling the syringe or proceeding to the other ear or to the next patient the detachable nozzle is removed and cleansed. A convenient length for these nozzles is four inches; it will sometimes be advantageous to have more than one of them. The syringe may be had in sizes of one, two, three, and four ounces. It is made by the Medical Supply Association of 228, Gray's Inn-road, London, W.C., with nozzles of various sizes.

V. H. WYATT WINGRAVE, M.D.Durh.

Stratford-place, W.

THE LANCET.

LONDON: SATURDAY, JANUARY 27, 1906

The Value of the Tuberculo-opsonic Index in the Diagnosis and Treatment of Tuberculous Infections.

THE Royal Medical and Chirurgical Society is to be congratulated upon the success of a recent discussion of the vaccine treatment of tuberculous infections.[1] The convening of symposial meetings for the consideration of the work of different observers, who are attacking the problems of a given disease along similar lines but from different standpoints, frequently affords valuable assistance alike to the investigators themselves and to the profession of medicine in general. The former often receive useful suggestions and encouragement in their work, while the practitioner may be enabled to extend his usefulness or to improve his mode of procedure by the adoption of the advances which may be thus established. The present time is an appropriate one to consider the value of the attempts to produce a specific cure for tuberculosis. The various antituberculous sera hitherto introduced have given at best but disappointing results and Dr. W. BULLOCH[2] in his paper read at the above-mentioned meeting was inclined to regard the era of tuberculous serotherapy as past. There is, on the other hand, at present a disposition to return to the use of some vaccine; in other words, to revert to the method originally introduced by KOCH, for it should be borne in mind that all the forms of tuberculin and its many derivates are technically vaccines—i.e., dissolved or suspended substances derived from the bacilli. This method has been consistently defended and modified by him and adopted with some measure of success by TRUDEAU, POTTENGER, TURBAN, PETRUSHKY, and other observers. TRUDEAU'S conclusions are of special interest, since as a result of observation of a series of cases extending over 12 years he found that the inoculation of tuberculin used as an adjunct to sanatorium treatment gave a larger percentage of "cures" and a smaller percentage of relapses than sanatorium treatment alone. In this country tuberculin after the first disappointment at its results fell into disrepute, and both it and its successors have been but little used. But the illuminating and exact researches of Professor A. E. WRIGHT have demonstrated the value of the method of treatment by tuberculous vaccines and have afforded an index by which to gauge the effect of the inoculations and to determine the times at which they should be given.

The discovery of opsonins and the investigation of the opsonic index are of such importance that we may perhaps be pardoned if, assuming that not all of our readers are familiar with them, we briefly outline the principles and technique of Professor WRIGHT'S researches. The study of immunity and of the reactions in the body produced by bacterial invasions has established the fact that the protective mechanism is a complex one, involving both the chemical agencies of certain antibacterial substances in the serum and tissue fluids and the vital activities of the phagocytes. The protective substances exert their influence by combining with the chemical constituents of the bacteria and are therefore called bacteriotropic substances by KOCH. According to the effect which they produce they are called agglutinins, bactericidal substances, bacteriolysins, or opsonins. The opsonins apparently prepare the bacteria for ingestion by the phagocytes, since if normal white corpuscles be washed with isotonic salt solutions so as to get rid of the serum the corpuscles will no longer ingest bacteria, but they will do so at once in the presence of normal serum. The opsonic index for a given organism is the ratio of the opsonic power of the serum to be tested to that of a normal person. This is determined by taking in a capillary tube equal quantities of washed blood corpuscles, of a suspension of tubercle bacilli, and of the serum to be tested, mixing them and incubating for about 20 minutes, and then determining the average number of bacilli ingested per corpuscle. Precisely the same determination is made with a normal serum or the mixed serum of several normal persons. The ratio of the two numbers obtained gives the opsonic index of the first serum. The tuberculo-opsonic index in healthy persons seems to be very constant; thus in various series recorded independently by Dr. BULLOCH, by Dr. DAVID LAWSON and Dr. I. S. STEWART, and by Dr. G. W. ROSS the opsonic index found in healthy persons was always between 0·8 and 1·2, giving a mean of 0·95. In tuberculous subjects, on the other hand, very considerable variations are found. Professor WRIGHT maintains, and all the above observers support his contention, that an index beyond the normal range—i.e., below 0·8 or above 1·2—is strongly suggestive of the presence of tuberculosis. Dr. ROSS, indeed, has stated that he had never found an opsonic index of 1·3 in any case that was not definitely tuberculous. On the other hand, in 75 per cent. of his cases of lupus Dr. BULLOCH found an opsonic index below the lowest normal limit of 0·8. These apparently paradoxical results find a very plausible explanation in the observations of Professor WRIGHT who maintains that two classes of bacterial invasions exist, in one of which—the local infections—the opsonic power remains permanently low and does not vary, while in the other class—the systemic infections—it fluctuates and is frequently above the normal. In the former the mechanism of protection is not set into action owing to the local character of the infection and the rarity with which bacteria or their products reach the general circulation, whereas the variations of the index in the general infections are due to auto-inoculations of bacterial elements. When the effect of an injection of a vaccine is considered it is found that the first result is invariably a diminution in the protective substances, as shown by a lessening of the opsonic power. This is referred to as the "negative phase" and is followed by an increase of the protective power

[1] THE LANCET, Dec. 2nd and 9th and 16th, 1905.
[2] THE LANCET, Dec. 2nd, 1905, p. 1603.

and a rise in the opsonic index beyond the original height, constituting the "positive phase." This increased height may be maintained but in the case of tubercle vaccines it usually comes down to its original level. Professor WRIGHT finds that negative phases can be superimposed if successive inoculations succeed one another too rapidly, thus lowering the patient's resistance and producing injurious effects, whereas it is difficult in the case of tubercle vaccines to obtain cumulation of positive phases. He has by this means explained the variable and disappointing results obtained with tuberculin by some observers, while he maintains that the determination of the opsonic index is an indispensable guide to the administration of successive doses and to the quantity to be given. For example, if with successive doses the negative phase becomes less marked the dose is adequate and is beneficial, whereas if the negative phases become more marked the dose must be lessened. It is obvious that an injection should never be given during a negative phase. Moreover, small doses are quite effective in starting the formation of protective substances and, doubtless, in the past far too large doses have been given. Professor WRIGHT now uses the new tuberculin (T.R.) of KOCH in quantities equal to $\frac{1}{1000}$th milligramme of dried powdered bacillary substance and never exceeds $\frac{1}{100}$th milligramme.

A criticism of Professor WRIGHT'S views by Mr. W. WATSON CHEYNE appeared in our columns shortly after the publication of the papers read at the Royal Medical and Chirurgical Society.[3] Mr. WATSON CHEYNE, while recognising the originality and the brilliance of the work, regards many of Professor WRIGHT'S contentions as theoretical and not proven, and deprecates any intemperance in applying the principles of inoculation to the exclusion of other well-tried methods, both surgical and hygienic, as likely to lead to disappointment and once again to cast discredit on tuberculin as a remedy. He thinks that other as yet incompletely elucidated factors in the production and spread of local bacterial diseases will have to be taken into consideration and that therefore an exaggeration of the importance of the opsonic factor in the protective mechanism may tend to hinder rather than to promote progress. The warning is a sound one. When the outcome of such inoculations is considered it is found that in localised tuberculous lesions satisfactory results have been obtained, especially when measures have been simultaneously adopted to increase the flow of lymph through the affected part. Examples of such localised lesions as lupus, tuberculous ulceration of subcutaneous tissues and bone, tuberculous glands, genito-urinary tuberculosis, tuberculosis of joints and of the peritoneum, and pulmonary tuberculosis without fever, have all exhibited benefit when so treated. On the other hand, in general infections the problems are much more complex and the fact that bacterial products are being spontaneously absorbed renders the administration of further bacterial substances a doubtful expedient. Professor WRIGHT suggests that before doing so we must prevent the auto-inoculations and thus endeavour to convert the infection into a localised one, and considers that for this purpose the patient should be kept at rest in bed and the coagulability of the blood increased in order to lessen lymph flow and then later, when this is effected, carefully controlled and interspaced doses of vaccine should be administered. At present, however, it would seem that, at any rate as regards cases of pulmonary tuberculosis, the method is only likely to be of value in apyrexial cases in which the painstaking, laborious, and carefully recorded observations of Dr. LAWSON and Dr. STEWART point to a beneficial effect, for they found that the protective power of such cases in sanatoriums could be raised by inoculations to a higher level than is possible by sanatorium or climatic treatment alone, and in this their results coincide with those of TRUDEAU. There are difficulties in the way of any general adoption of the method, since the determination of the opsonic index requires considerable practice and makes large demands on the time of the investigator if any number of cases is concerned. Dr. LAWSON and Dr. STEWART endeavoured to find some more easily observed clinical manifestation of the negative phase but without success, so that at present the opsonic index is for most conditions indispensable. In a series of cases of tuberculosis of the urinary system, incorporated in a paper by Mr. J. G. PARDOE[4] read at the same meeting of the Royal Medical and Chirurgical Society, the inoculations of tuberculin (T.R.) were given without determination of the opsonic index, as symptoms are quickly produced in these cases by overdosing which are easily recognisable. If some less laborious means of estimating the protective power and its variations can be discovered for other conditions the usefulness of the method will be greatly extended.

[3] THE LANCET Jan. 13th, 1906, p. 78.

Stokes-Adams Disease due to a Lesion of the Auriculo-Ventricular Bundle of His.

FEW diseases offer such a field for the application of known physiological principles to pathological phenomena as that to which the name of Stokes-Adams disease has been applied. The striking character of its symptoms—slow pulse with syncopal, apoplectiform, or epileptiform attacks, and the associated phenomena of Cheyne-Stokes breathing, angina pectoris, and cardiac arrest—combines to give it a peculiar interest. An excellent historical and critical survey of our knowledge of this disease by Professor W. OSLER was published in THE LANCET of August 22nd, 1903.

Recently in an annotation[1] we drew attention to some interesting experiments by Dr. JOSEPH ERLANGER on the phenomenon termed "heart block" by physiologists, which threw light on Stokes-Adams disease. In studying a case of the disease he found that the bradycardia was due to heart block. When the block was complete the auricles responded normally to influences exerted on the heart through its extrinsic nerves but the ventricles did not respond. This led Dr. ERLANGER to study heart block by experiments on a dog. He found that on clamping the limited region in which lies the

[4] THE LANCET, Dec. 16th, 1905, p. 1766.
[1] THE LANCET, July 29th, 1905, p. 306.

only muscular connexion between the auricles and ventricles (the auriculo-ventricular bundle of His) the normal sequence of auricular and ventricular beats gave place to a partial block in which the beats of the auricles were to those of the ventricles as 2 to 1. On further clamping the ratio rose to 3 to 1 and this condition usually passed into one of complete block in which the auricles and ventricles beat independently. The analogies with Stokes-Adams disease are obvious and led Dr. ERLANGER to conclude that the lesion is in the same position in both conditions. In the *American Journal of the Medical Sciences* for December, 1905, Dr. ALFRED STENGEL has published an interesting confirmation of Dr. ERLANGER'S conclusion—the first case in which a lesion of the auriculo-ventricular bundle of His has been recorded. A man, aged 57 years, was admitted into hospital on Sept. 19th, 1905. His illness began two and a half years before; while working he suddenly fell back and became unconscious for a few moments. He speedily recovered but three months later had another attack and then attacks followed at the rate of one in every two or three weeks. The patient was well nourished. The arteries were atheromatous and the pulse was 36 and of slightly increased tension. There was pulsation in the epigastrium and in the veins of the neck. The apex beat was strong and visible in the fifth space just outside the mid-clavicular line where a systolic thrill was felt. A harsh systolic murmur was heard at the apex and transmitted to the axilla. The urine did not contain albumin but there were a few hyaline and granular casts. Attacks occurred on the 23rd; they began with momentary pallor which was followed by flushing or cyanosis and slight tremor of the arms. After the attack the face was pale and the colour gradually returned. During several of the attacks the pulse stopped for a few seconds. After the attack the pulse-rate increased for a short time and then subsided to a steady rate of 16 to 18. The pulsation of the veins of the neck continued during the attacks at the same rate as between them—80 to 100 a minute. During the attacks there was only partial unconsciousness. The attacks became more severe and more frequent. During one, which occurred on the morning of the 27th, the pulse stopped for two minutes and ten seconds. In the afternoon the attacks ceased but Cheyne-Stokes respiration began. Three hours later death occurred. During the last few days of life there was apparently complete heart block. The auricular (venous) pulsations were from 80 to 140 per minute while the ventricular pulsations were from 18 to 26. The former rate was maintained even while the pulse ceased during the attacks. In the intervals the pulse was fairly regular and strong, the rate being from 18 to 30. The necropsy showed hypertrophy of the heart, especially of the left ventricle. The muscle was of normal appearance except a small area at the upper part of the interventricular septum. The root of the aorta and the orifices of the coronary arteries were atheromatous. The coronary arteries were thickened but nowhere calcareous or stenotic. On the anterior leaflet of the mitral valve was an atheromatous patch, sclerotic and white, which extended to the endocardium exactly over the bundle of His where the latter passes from auricle to ventricle. The bundle was involved in the disease, the exact extent of which cannot be stated until the microscopical examination is completed.

The phenomenon of "heart-block" has long been known to physiologists—indeed, since the classical experiments of STANNIUS on the frog's heart—although their explanation as the consequence of interference with the normal conduction of the wave of contraction is more recent. The application of these results to the explanation of the clinical features of cases of cardiac disease has, however, been much neglected. The interesting paper by Dr. JOHN HAY, which we published in last week's issue, shows how strikingly valuable such a study of the known physiological properties of heart muscle may be when applied to the peculiar and varying conditions of a complex case of cardio-vascular disease. Dr. HAY'S ingenious and careful comparison of the radial and the jugular pulses suggests that a disturbance of rhythm may be caused at one time by a block in the conductivity of the heart muscle and at another by a disturbance in its excitability. The method is one which would seem to offer a useful field in its application to other cases of cardiac irregularity by affording valuable indications for treatment. In this connexion it is of interest to note that STOKES in one of his original cases noted the peculiar character of the jugular pulsation and also that it was more than double the rate of the ventricular beat.

Barmaids.

A PAMPHLET on the employment of "Women as Barmaids" seems likely, at the first glance, to excite attention chiefly by the absurdity of its title, as displayed by the manifest impossibility of employing "men" in this particular capacity, however much they might be available as barmen, or, in transatlantic phraseology, as "bar-tenders." But a total absence of any sense of humour is not a new feature of philanthropy and does not of necessity detract from the value of its work. On this particular occasion the pamphlet, notwithstanding its title, really contains matter worthy of consideration; and, notwithstanding the well-understood objections to restrictive legislation in general, makes out a case for prohibition which at least requires a reply. There can be no doubt in the mind of any reasonable person that the vocation of a barmaid is attended by perils from which young women should, so far as possible, be sheltered. We have lately published articles on the public-house as a factor in the spread of disease, and it is manifest that the conditions favourable to the diffusion of tuberculosis which those articles described must operate with far greater intensity upon the attendants, who are constantly exposed to them, than upon the customers, who come and go. But, even apart from these conditions, the long hours of standing and the frequently excessive fatigue are productive of many uterine and digestive disorders and of feelings of malaise which are only too likely to lead to the alcoholic indulgence for which many opportunities are afforded; while the male frequenters of a drinking bar are often persons of loose conversation and degraded character, the worst possible companions for girls and the most likely to lead them astray. If we add to this the consideration that the

employment affords no prospects; that it uses up the majority of those engaged in it as soon as the first attractiveness of youth is past; that it is followed by a small proportion only of the great body of women workers; and that the inscription over the gate of the Inferno is not inappropriate to it in relation to the difficulty of turning away to better forms of industry, we shall have stated a very strong case against the usages which permit young women thus to be occupied. It appears to be true that "learning the bar" has no tendency to render a woman a better wife or mother, that it affords her no security of employment after about the age of 30, that it renders her unacceptable to employers of almost every other kind, that it often permanently injures her health, and that it exposes her to exceptional risks of seduction and of intemperance, with the consequences, both to herself and to her offspring, which these conditions may entail. If this be so, we may well ask ourselves whether it is consistent with a due regard to the national welfare to allow the daughters of the Empire to be offered up as sacrifices to the Moloch of the drink traffic, or, as too often happens, to be employed as decoys for the purpose of adding to the intemperance by which the country is at once weakened and disgraced. The demand for the most perfect individual liberty compatible with the general welfare is a right and reasonable one; but it is not either right or reasonable that this liberty should extend so far as to allow young women, the majority of them of exceptionally good physique and appearance, and the best calculated among their contemporaries to be the mothers of healthy and vigorous children, to engage in an avocation which is not only likely to be highly injurious to themselves but which is almost certain to prevent the full discharge of their duties to the community.

It may perhaps be fairly questioned by any who are acquainted with the conditions of industrial life to-day and with the nature of the industrial and moral training commonly afforded either by the schools of the period or by the majority of working-class mothers, whether the girls and women who are growing up around us might not profitably be subjected to a larger measure of supervision than is ordinarily extended to them. On every side it is manifest that the great desire of the working-class girl is to be "independent" of home or of every other control, while at the same time there has usually been but little preparation in her past to enable her to exert her independence for her own permanent advantage. Domestic service with a careful mistress, usually at once the best protection for the inexperience of youth and the best possible preparation for the duties of wifehood and maternity, is falling more and more into disfavour with the classes for whom it was once almost the sole means of remunerative employment, and, where it is still adopted, is to a large extent regarded on both sides as a mere contract for work and wages, involving no reciprocity of duty beyond the performance of the former and the payment of the latter. The modern very considerable development in London and large provincial towns of ladies' clubs, of tea-rooms, and of such-like establishments, in which waitresses are only required during certain portions of the day, has greatly tended to encourage discontent with ordinary household duties and with the restraints inseparable from them, and although the openings of the new kind are not yet sufficiently numerous to affect materially the great mass of female labour, they are undoubtedly sufficient to occasion general discontent with all positions in which similar restraints are unavoidable. It would seem to dispassionate observers that in these social matters, as well as in regard to many public questions, the members of the working classes, of both sexes, have been placed in positions of greater liberty and greater independence than they are at present qualified to fill with advantage either to themselves or to the community, and that we may possibly have to pay a heavy national reckoning for their mistakes. If we should be spared this reckoning, our people may be expected by-and-by to have learned from experience sufficiently to arrive at some better adjustment of themselves to their environment than is now commonly effected. In the meanwhile, it is certainly legitimate to take advantage of all favourable currents of popular opinion, and, even at the expense of some curtailment of personal liberty, to protect classes who have displayed very little capability of protecting themselves. A measure forbidding the employment of young single women in bars where intoxicating drinks are sold, unless they had been actually so employed before its enactment, would at once give greatly increased security to barmaids now in possession and would close the door to many abuses of a manifestly flagrant character.

In a matter of this kind, as in relation to most other social questions, it might often be in the power of members of the medical profession very usefully to influence public opinion. It can be no matter for surprise if a silly girl, ignorant of the dangers she is incurring, likes to accept an employment of which she only knows that she will be expected to wear becoming dresses, to look her best, and to talk to people whom she would describe as "gentlemen." Her mother will know nothing of the probable effect of long hours of standing upon her health and will be likely enough to entertain and to encourage matrimonial hopes with regard to some of the "gentlemen" in question. The medical practitioner who has perhaps brought the girl into the world, and has seen her through the ailments of her childhood, if he has preserved the friendly and confidential relations with her family which it is always well to establish with patients, however humble they may be, might often be able to hold her back from a course only too likely to end in her destruction; and his advice, acting upon the class to which she belongs, might become a potent influence in reconciling them to the complete exclusion of their daughters from a form of occupation calculated to be detrimental alike to their physique and to their morality.

Annotations.

"Ne quid nimis."

MOTOR-CARS AND INCOME-TAX RETURNS.

A CORRESPONDENT raises the important question as to whether, in making a return for income-tax purposes, the cost of his motor-car, which he uses solely for professional purposes, should be charged to capital account with a depreciation each year or to profit and loss account—thus, in the latter case, treating the motor-car as a "trade

utensil." There can be no question of the advantage to the owner of the car in charging it up right away to profit and loss account and thus doing away with the necessity of calculating an adequate depreciation; but the local surveyor of taxes is not likely to agree to this course: he will insist on its being charged to capital account. With such a delicate piece of machinery as a motor-car, the working life of which cannot be averaged at more than three years if used in daily practice, it is a serious matter to place its cost to capital account unless a substantial depreciation is claimed and allowed for it. At the end of three years a car originally costing, say, £300 will not fetch more than £70 or £80, showing an annual depreciation of something like 25 per cent. How many surveyors would agree to such a depreciation? The surveyor of the district in which our correspondent resides requires that his car should be charged to capital account and a 10 per cent. depreciation be charged for it—an obviously absurd amount considering its rapid depreciation. Of course, all the cost of upkeep, including chauffeur's wages, petrol, oil, recharging accumulators, repairs, renewals, insurance, garage charges, and so on, would legitimately be charged to profit and loss account, and on this point there is no difference of opinion; but it is certainly desirable that some general and equitable agreement should be arrived at between owners and surveyors on the particular point to which our correspondent alludes. In view of the importance of the subject we invited four of the leading associations dealing with income-tax to express their opinion upon the matter, and they kindly replied as follows:—

1. The motor car is certainly capital expenditure; your correspondent cannot charge it up in a lump sum against the expenditure of the year. He should have a depreciation upon it, and this depreciation can be charged up year by year, and eventually, when the car is worn out, he need charge up to capital only the excess paid for the new car over the value of the old car, as shown in his accounts, the rest being charged to profit and loss.
2. The actual cost of the motor-car should be charged to capital account.
3. The cost of the motor-car must be charged to capital account.
4. It would be to the disadvantage of your correspondent to charge the cost of a motor-car used entirely for professional purposes to capital account with, say, 10 per cent. depreciation and even considerably more. Our opinion of the correct way is to spread the cost over, at most, five years and charge besides repairs but not depreciation.

It will thus be noted that the first three opinions leave no room for doubt as to the course to be pursued. The last one would certainly seem to suggest that no hard-and-fast rule has as yet been laid down; but we doubt whether any surveyor will be found who will permit the course suggested to be carried out. The matter might with advantage be discussed and the exchange of opinions and experiences would undoubtedly prove useful.

WOOD AS HUMAN FOOD.

THERE is really no reason why, if the necessity arises, wood should not be employed as a source of food since it consists chiefly of cellular fibre which, on suitable chemical treatment, may be converted into sugar. But directly wood can have no value as a food for the human organism, as a correspondent in the *Times* has declared, inasmuch as the digestive juices are not able to deal with it. A certain amount of woody fibre is, we believe, digested by the horse by reason of the presence of a peculiar digestive enzyme in that particular animal's digestive canal which is capable of converting cellular tissue into sugar. The correspondent just referred to would appear to be in the possession of a similar peculiarity, for he writes the following (from a workhouse in Mile End Old Town): "Working in the firewood department I have discovered that common deal wood is a valuable food and medicine if cut small and eaten. Brown bread is not in it for its tonic and invigorating effect." The writer, of course, may mean this as a joke at the expense of the advocates of the brown loaf or of the administrative department of the workhouse. Chemistry, at any rate, throws no light on either a "tonic" or an "invigorating effect" which could be fairly ascribed to the constituents of wood, for they consist almost entirely of fibre which is highly indigestible and which yields absolutely nothing of nutritious value to the action, powerful though it be, of the human gastric juices. As we have said, however, wood on long treatment with acid is eventually transformed into sugar which, of course, is a valuable food of its class. In the same way our worn-out shirts and collars could be converted into food, and possibly if this gentleman were to substitute a white shirt for his "common deal wood" the results would compare favourably with even white bread. His idiosyncrasy is, we believe, rare.

CHILDREN WHO ARE SPEECHLESS BUT HAVE HEARING.

MUCH care has of late years been bestowed upon the training of children defective mentally or otherwise. There is, however, a considerable class whose education is often neglected. We refer to children who have power of hearing—i.e., whose action can be controlled by spoken words, though they neither speak themselves nor make any response in words. A child may hear music and hum the tune or repeat it; he may go upstairs and find something when told to and yet remain speechless. These cases vary; usually examination shows no defect in the size and form of the head or development of the features but there is a lack of the normal brain spontaneity that can be coördinated in imitation of movements made by a teacher and such action as occurs is inexact, with a corresponding want of imitation of the movements produced in the face during articulation. The result is that speech remains absent from want of training of the necessary movements of the lips and tongue; the child will sometimes sing though he will not articulate. All that the children need is training in imitative faculty with daily practice in oral teaching, such as is almost universally used with deaf children. In public elementary schools there is often great difficulty in providing proper teaching for these speechless children who have hearing. The Elementary Education (Blind and Deaf Children) Act, 1893, is compulsory both upon the educational authorities and parents but the speechless children who have hearing do not come under its provisions and as the Education (Defective and Epileptic Children) Act, 1899, gives power to the authorities "to determine what children are defective," there is often a great difficulty in providing the special form of training needed by the children to whom we have referred. This suggests the desirability of amending and consolidating those Acts.

THE TEACHING OF HYGIENE AND PUBLIC HEALTH IN IRELAND.

THE provisions for the teaching of public health in Ireland are far from being what they should be. The greater portion of the work of a medical officer of health in Ireland is carried on by the dispensary medical officers who are apparently *ex-officio* medical officers of health of their respective dispensary districts. Most of these gentlemen are qualified in respect of their having obtained the diploma of the Conjoint Board of the Royal Colleges of Physicians and Surgeons in Ireland. These bodies apparently do not insist upon their students attending a course of lectures upon public health, for this important subject is combined with that of forensic medicine as one group in the third professional examination, and any student entering for this examination must send in a certificate of attendance for three months at lectures upon these two subjects. In these circumstances most of the course may be given up to forensic medicine, when all the attention that

public health will receive is a few lectures at the end of the course. The consequence is that many dispensary medical officers become *ex officio* medical officers of health without having had adequate training. On the other hand, the Royal University of Ireland requires its students to attend a course of 30 lectures in hygiene. Moreover, by a recently passed regulation, the students of Maynooth, who supply most, if not all, of the Roman Catholic secular clergy in Ireland, attend lectures in hygiene, and so, too, do the nurses belonging or affiliated to Queen Victoria's Jubilee Nursing Institute. Thus in a way the future medical officers of health may receive less instruction, so far as attending lectures goes, in the subject of hygiene than the parish priest or the district nurse who may work with them in their particular district. We are quite aware of the fact that public health and hygiene cannot be learned entirely by attendance at lectures on these subjects, but the fact remains that if lectures are given and if medical students have to attend them the teaching gives such students a sound foundation upon which to build further knowledge. The main facts of hygiene should be more appreciated than they are by the public, although we admit that in this direction popular attention is being aroused. A course of lectures upon sanitary matters has recently been given in the Royal College of Science, Dublin, the audiences being large. Such education of the people is all for good, for in many instances, although the medical officer of health may be energetic and well informed, his efforts for reform are entirely neutralised by the ignorance of the populace with whom, through their elected representatives, he has to deal.

PALUDISM IN ANNAM.

Dr. Vassal has written in an interesting manner on his researches into the etiology of malarial fever in French Indo-China. His paper, entitled "Une Mission à Lang-Bian," appears in *L'Europe Coloniale*. The first interesting point which he establishes is that paludism does not respect high altitudes. "The sanatorium of Cilao at Réunion," writes Dr. Vassal, "though built at 1215 metres above sea level and enjoying an exceptionally good climate, suffered from an invasion of the endemic marsh fever." Dr. Laveran's investigations in 1880 having established the fact that the malady is caused by the bite of anopheles, a species of mosquito which introduces hæmatozoa into the blood, Dr. Vassal confirms this fact by declaring that "alone among all mosquitoes the anophelines contract and propagate malarial infection. Where there are no anopheletes," he says, "there is no paludism." A proper diagnosis, he maintains, can only be made by the microscope. But the natives of Annam show the greatest repugnance to yield up a single drop of their blood for examination—under the influence probably of some deep-seated superstition. As it happens sometimes, too, that the hæmatozoon is not to be met with in the peripheral circulation, the observer is constrained to direct his attention to the state of the spleen, as the protozoon causes congestion and inflammation of this organ as well as of the liver and bladder. Splenic hypertrophy in the case of children is so noteworthy a symptom that Koch has already called attention to the percentage of children thus affected as an easily established "endemic index" of the malady. In his quest after samples of Annamite children's blood Dr. Vassal seems to have been regarded as a regular "bogey-man" in the district. "For this reason," he writes, "the village of Fim-nom would not allow me to examine the children and the villages of Dang-kia and M'lone refused to be vaccinated, for I made a point of rendering what service I could to these forlorn people in the course of my researches. ..... Whenever I drew near the Moï women and children would shut themselves up in their houses. At last the master of the house would venture out, followed perhaps by a few young men, and while my instruments were in process of boiling my distributions of pearls and tobacco would begin to take effect. Little by little the doors of the huts would open and the children would be brought out by their mothers. Each child always received a certain number of pearls ..... and while I vaccinated I was on the look out for paludic symptoms. The research was pursued under cover of the vaccination and when I came across a sympathetic subject I would manage to get a drop of blood. ..... I found two types of malarial fever—the malignant tropical tertian and tertian fever in the strict sense. At the period of observation (July and August) the rains had commenced and the rice fields were flooded—without doubt a favourable period." The prevalence of the disease, as ascertained by Dr. Vassal, is astonishing, 64 per cent. of the natives being affected. At a place eight kilometres from Drau he examined 16 natives and found that all were affected. Here, he says, "the example of one family may be cited. The father had an enormous splenic tumour. One child was rickety, and seemed to have the 'abdomen of a batrachian,' so swollen out was it by his spleen. The mother was enceinte, and so menaced by the fever that the worst results were to be anticipated. Another wife had died with her child a few days after confinement, owing to an attack of fever." A last point of interest raised by Dr. Vassal is the question of clothing. "In the hygienic conditions," he writes, "in which the Annamites of Lang-bian live, relapse becomes inevitable, and cold is perhaps the cause which brings the fever back most easily. The Lang-bian Annamite has nothing to protect him from the cold. His clothing and his dwelling are the same as in the plain. His food becomes insufficient; he has no fresh fish. ..... Rice and salt fish cost ten times what they are worth. An Annamite can only live at Lang-bian by wearing warm clothes and changing his food and method of living, just as an Annamite dresses and lives like a European when he removes to the metropolis."

ARTERITIS IN CONNEXION WITH TYPHOID FEVER.

ARTERITIS is a well-recognised but rare complication of typhoid fever. In few of the recorded cases has a complete anatomical and bacteriological examination of the lesion been made. Hence the importance of the following case which was reported at the meeting of the Société Médicale des Hôpitaux of Paris on Dec. 1st, 1905, by M. E. Rist and M. L. Ribadeau-Dumas. A girl, aged seven years, was admitted into hospital on Feb. 24th, 1904, the eighth day of an attack of typhoid fever, in a state of great prostration. The temperature was 105·4° F. and the pulse was 90 and dicrotic. Widal's reaction was obtained. On the 27th rose spots were observed. The case ran an ordinary course and the temperature fell by lysis, attaining 100° F. on March 9th. But after this defervescence was arrested and the temperature ranged from 100° to 100·4° until March 14th. On the 15th the temperature suddenly rose, reaching 104° in the morning and 105 8° in the evening, and the patient complained of severe pain in the right leg. Examination showed some pallor of the toes. The course of the femoral artery was tender and the pulsations of the popliteal artery were less distinct than on the other side. On the following days arterial pulsation was completely absent in the right thigh and leg. The limb was pale and the great toe was beginning to shrivel. On the 21st all the toes were mummified. On the 23rd a large bulla filled with sanguineous serum appeared on the upper third of the leg. Below this the skin was grey and softened. The toes were dry, violaceous, and of wooden hardness. Bullæ appeared on

the upper part of the leg, indicating the line of demarcation. The patient suffered from intolerable pain and amputation was performed on April 1st. It was necessary to amputate in the upper third of the thigh in consequence of the impermeability of the arteries. Recovery was uneventful. At the operation the femoral artery was obliterated at the point where it was divided. In the upper part, corresponding to the middle third of the thigh, the artery formed a hard rounded cord. Lower it became irregular and had a moniliform appearance. In the popliteal space the artery was enlarged and flattened and its contents were softened. These changes were also found in the tibial and peroneal arteries and in their branches. Two abscesses were found in the muscles—one of the size of a walnut in the adductor magnus and the other, of the size of a hazel nut, in the vastus internus. Around the abscesses the muscles had a greyish tinge. Microscopic examination showed only slight change in the upper part of the femoral artery. There were some collections of leucocytes in the adventitia and the endothelium was a little thickened. The vessel was occluded by a fibrinous clot. The popliteal artery was much more altered. It contained pure pus and its walls were in process of destruction. The internal coat had completely disappeared, the middle coat was infiltrated with polynuclear leucocytes, and the adventitia was replaced by a mass of leucocytes, traversed in places by fibres of connective tissue. At a higher level the changes in the artery were less intense and it contained fibrinous clot. Still higher there was only endarteritis. In the contents of the femoral artery and in the pus of the muscular abscesses the typhoid bacillus was found in pure culture. Thus the bacillus was the cause of the obliterative arteritis.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE lectures of the present year to be delivered before the Royal College of Physicians of London, Pall Mall East, S.W., are as follows:—The Milroy lectures will be given by Dr. W. H. Hamer on March 1st, 6th, and 8th, the subject being Epidemic Disease in England—the Evidence of Variability and of Persistency of Type; the Goulstonian lectures will be given by Dr. H. Batty Shaw on March 13th, 15th, and 20th, the subject being Auto-intoxication; the Lumleian lectures will be given by Dr. D. Ferrier on March 22nd, 27th, and 29th, the lectures being on Tabes Dorsalis; and the Oliver-Sharpey lectures will be given by Dr. E. I. Spriggs on April 3rd and 5th, the subject being the Bearing of Metabolism Experiments upon the Treatment of Some Diseases. The days of the week for the delivery of the lectures are Tuesdays and Thursdays and the hour of delivery is 5 P.M.

PARISH MEDICAL OFFICERS IN AUSTRIA.

THE Vienna correspondent of the *Standard*, in the issue of that journal of Jan. 20th, gives a grim account of the position of parish medical men in Austria. The total number of these officials in Lower Austria is, he says, 450. Of these, only 340 are able to keep themselves respectably. Only 170 can educate their children and 145 can only live by taking extra work themselves or by their wives doing the same thing. That is to say, the medical men act as wine merchants on commission or take some similar post and their wives do needlework or act as post-mistresses or manageresses of shops. More than half the medical men in question are compelled to send their children out to work. The average salary is about £25 per annum and although some get more yet others get less. The fee for vaccination is 2*d*., which includes the vaccination, filling up two certificates, and attendance for eight days. The correspondent continues: "For death certificates he does not get even the English shilling nor for the notification of infectious diseases. ....." There is, of course, no such thing in England as a fee for filling up a death certificate and the correspondent has evidently confused the shilling paid to the medical officer of a public institution for notifying a case of infectious disease. However, the Austrian medical men are going to strike and the communal authorities are said to have replied that if the medical men will no longer vaccinate there are plenty of quacks who will. This is a foolish argument, but no more foolish than kindred arguments put forth by antivaccinationists in this land. It is for the interests of a community to see that its medical men are paid a salary which will not only enable them to live but which will also enable them to devote their best energies to the task of guarding the health of their fellows against the inroads of disease.

WHAT IS DISTILLED WATER?

FOR the purposes of the Sale of Food and Drugs Act distilled water has been held to be a drug, and odd as this definition may appear to be it would after all be difficult to find any more suitable appellation. Distilled water is practically a chemists' commodity, may even form, and has formed, the sole item in a medical prescription, and it is an official preparation of, and is defined in, the British Pharmacopœia. This last fact implies its use as a drug in medicine. In the proceedings taken at Marylebone police court against a druggist, the defendant "was summoned for selling to the prejudice of the purchaser a drug—namely, a pint of distilled water—which was not of the nature, substance, or quality of the drug demanded." Sir Thomas Stevenson stated that he had analysed a sample of the water and had found it to be very dirty and full of mouldy growths and that it gave an appreciable deposit. The British Pharmacopœia requires distilled water to be colourless, tasteless, and odourless and when evaporated it should leave "at most a scarcely visible residue." Clearly the sample in question did not conform to these requirements and, legally speaking, any substance defined in the Pharmacopœia is a drug. The defence was that it was assumed that the water was required for photographic purposes but no question on this point was asked at the time the purchase was being made. The defence was hardly justifiable since it is essential in photographic processes to employ distilled water and it is hardly likely that photographers would incur the expense of procuring distilled water if ordinary tap water would answer the same purpose equally well. The defendant was fined 10*s*. with £3 3*s*. costs, the magistrate remarking that it was not suggested that he had done anything fraudulent or that reflected on his character.

THROMBOSIS OF THE RECEPTACULUM CHYLI AND CHYLOUS ASCITES IN CIRRHOSIS OF THE LIVER.

IN the *Medical News* (New York) of Nov. 11th, 1905, Dr. H. J. Nichols has reported a case of cirrhosis of the liver complicated with thrombosis of the receptaculum chyli and chylous ascites. Cases have been recorded of thrombosis of the thoracic duct near its junction with the subclavian and jugular veins but not of thrombosis at a lower level. The patient was a man, aged 74 years, addicted to alcohol. He was admitted to hospital on March 18th, 1905. The abdomen was distended and tympanitic and covered with a network of enlarged veins which extended to the lower part of the chest. In these the blood flowed from below upwards. At the bases of the lungs resonance was impaired and a few liquid râles were heard. The heart was slightly enlarged to the left and a mitral systolic murmur was heard. The legs

were œdematous. The liver dulness extended in the nipple line from the fourth to the seventh ribs. There was some dulness in the flanks. Incisions were made in the legs and saline purgatives and infusion of digitalis were given without relief. The legs became more distended and the abdomen more swollen, with marked dulness in the flanks, fluctuation, and dyspnœa. On March 28th paracentesis was performed and yielded 5700 cubic centimetres of fluid. The abdomen became lax and the œdema disappeared. The fluid re-accumulated. On April 6th 6200 cubic centimetres were removed and on the 16th 7800. On each occasion the fluid presented the same striking appearance. It was milky white, with a tinge of pink. On standing the pink colour disappeared and a red deposit formed. The fluid contained 1 per cent. of albumin and 1·3 per cent. of fat. Microscopic examination showed no large fat globules but a number of fine granules in constant motion. There were 24,000 erythrocytes and 1800 leucocytes per cubic centimetre. The latter consisted of small lymphocytes, 66·5 per cent.; large lymphocytes and transitionals, 13·5 per cent.; and polymorphonuclears, 20 per cent. The patient became comatose and died on April 26th. A necropsy was made. The abdomen contained about 2800 cubic centimetres of pink fluid similar to that removed during life. There was a typical hobnail liver which weighed 1400 grammes. The receptaculum chyli and thoracic duct were occluded by a firm fibrous clot. The mitral valves were thickened and insufficient. Very few cases of chylous ascites associated with cirrhosis of the liver have been recorded. The nature of the connexion between these conditions is not clear.

POISONING BY OLEANDER.

IN THE LANCET of Dec. 30th, 1905, p. 1894, Dr. F. Lucas Benham referred to the poisonous nature of oleander and desired information as to what instances of poisoning by that shrub are known. In the event of no records of its toxic effect being forthcoming there is direct and corroborative evidence sufficient to suggest the symptoms to be expected in cases of poisoning by oleander. It has been shown by M. Dubigadoux and M. Durieu[1] that the branches of the Algerian oleander yield on incision a poisonous, milky juice, from which can be isolated a substance chemically and physiologically identical with strophanthin, the glucoside to which strophanthus owes its activity. The generic name of oleander is *Nerium* and it belongs, as does strophanthus, to the natural order Apocynaceæ or the periwinkle family. To the same order belongs the ouabaïo tree, the wood of which yields the glucoside ouabaïn, resembling strophanthin in its chemical constitution and physiological action but being much more toxic. Apocynum or Canadian hemp, another member of this family, contains two active principles which act as cardiac tonics in a similar way to digitalis. Another member of the family, the white quebracho, is exceedingly active, affecting and, finally, paralysing the respiration, central nervous system, and heart. It is evident that the well-known members of the family to which oleander belongs have a powerful action on the heart. Digitalis itself, the best known of the cardiac tonics, is a member of a closely allied family, the scrophulariaceæ. It is probable, therefore, that oleander also exerts an action on the heart. It does not necessarily follow that the plant is equally active when grown in other countries—e.g., in South Australia. It is well known that drugs vary enormously in respect of their active principles and potency according to the climate and soil in which they grow. Digitalis affords a good example of this. It has been shown by M. François Franck[2] that from 0·2 to 1·0 gramme of the leaves collected in one part of France, the Vosges, produces a marked physiological effect, whereas in other parts as much as from four to eight grammes are given, while in Roumania so large a dose as from 12 to 15 grammes of the powdered leaves has been given without producing toxic effects. According to Allen[3] the leaves of oleander contain two glucosides, oleandrin and neriin, having physiological effects closely analogous to those exhibited by digitalis. Oleandrin is alleged to have basic properties, though it is free from nitrogen, while neriin is not improbably identical with digitaleïn.

[1] Journal de Pharmacie et de Chemie, 1896, p. 433.
[2] Archives de Physiologie, 1891 and 1892.

A REDUCTIO AD ABSURDUM OF THE PHARMACY ACT.

THE announcement was recently made in the *Financial Times* that a company had been registered to acquire a druggist's business at Newmarket with a unique directorate. Of the seven gentlemen holding the position of director five are professionally connected with horse-racing; they are A. D. Sadler, S. Loates, and G. Chaloner, trainers of race-horses; G. H. Martin, jockey; and E. Moore, turf commission agent; the remaining two directors being an auctioneer and a butcher. It is noteworthy that the board of directors is singularly lacking in members possessed of even a nodding acquaintance with pharmacy and the allied sciences. The situation of these gentlemen is decidedly Gilbertian. Are we to think that they have been chosen with a view of bringing their special knowledge to bear on any branch, however remote it might be, of the art of pharmacy. The *Financial Times* ironically suggests that this may be an application of the joint-stock principle to the medical treatment of horses and that the butcher and auctioneer may come in useful after the other "druggists" have had their innings. It emphasises an anomaly in the Pharmacy Act of 1868, whereby it is possible for limited companies of unqualified persons to practise as druggists and to use the title of druggist. The only safeguard to the public consists in the fact that the assistants employed in the shops of such companies must possess a pharmaceutical qualification in order to sell or to dispense scheduled poisons.

THE STRAITS SETTLEMENTS POISON ORDINANCE, 1905.

COLONIAL legislators frequently have the advantage over those who make laws for the mother country in that they do not always have to consider old-established customs or vested interests. In the *Pharmaceutical Journal* of Jan. 6th are given to the new rules made by the Governor in Council under Section 13 of the Straits Settlements Poison Ordinance, 1905, which afford a case in point. They include several wise restrictions which are not imperative in this country. The new Ordinance contains Schedule A, Parts I. and II., almost similar to Schedule A of the Pharmacy Act, 1868, and the same precautions have to be observed in the retail sale of poisons in both parts of the schedule as obtain in this country. It is noteworthy that sulphonal is included in Part I. In addition the rules provide that no poison shall be sold to any person under 18 years of age. Licences to sell by retail the several poisons named and described in Schedule A shall be issued only to such persons as are duly registered as licensed chemists and druggists under the Morphine Ordinance (XIV. of 1905). Schedule B is a new and commendable feature of the Ordinance. It includes several poisons which can only be sold wholesale by such persons as may be granted a wholesale licence under the provisions of the Ordinance. The quantities shown opposite each poison in Schedule B shall be deemed the minimum amount constituting a wholesale transaction.

[3] Commercial Organic Analysis, vol. iii., part 3, p. 137.

Records of the sale of such poisons must be kept in the form prescribed by the rules. It shall be lawful for any police officer not below the rank of inspector, and for the licensing officer under the Ordinance in each settlement, and for any officer of the medical department authorised in writing by the licensing officer, at all reasonable times to inspect the books kept under these rules and to take copies and extracts therefrom. The poisons under Schedule B, with the quantities named, are: arsenic and all preparations of arsenic, 5 lb.; mercury and all its preparations, except cinnabar, 1 lb.; lead acetate, 1 lb.; antimony and all its preparations except the sulphide, 1 lb.; carbolic acid, 5 gallons; phosphorus, 1 lb.; cyanide of potassium and all other metallic cyanides, 5 lb.; oxalic acid and all other oxalates, 5 lb.; and patent medicines containing any of the poisons enumerated in Schedule A, Parts I. and II., except those containing opium or morphine, as defined in Ordinance IX. of 1904 and Ordinance XIV. of 1904 respectively, 1 original packet. In addition it is provided that the following poisonous chemicals used in photography, if sold in original packets of one ounce or over, will be deemed wholesale within the meaning of this Ordinance: ferrocyanide of potassium, iodide of mercury, perchloride of mercury, oxalate of ammonium and potassium, sulphocyanide of ammonium, ferrocyanide of copper, and lead acetate.

WHAT IS WHISKY?

A FURTHER stage was reached in the whisky case at the North London police court last Monday, when the principal witness was Professor Sir James Dewar. Questioned as to his view of the meaning of the word whisky Sir James Dewar, speaking as a chemist, said it was a generic name given to several varieties of ardent spirit prepared in Ireland and Scotland from a distillation of a fermented infusion of grain technically called "wash." Whether the distillation was conducted in a patent or a pot still did not affect, in his opinion, this definition; both stills could be made to produce similar results. The pot-still whisky was the dearer of the two because it could not be produced so economically as the patent still, in which the process was more expeditiously done. He did not agree with the statement in the certificate of the borough analyst that whisky should contain 380 parts of secondary products per 100,000 parts of absolute alcohol present. The average, he thought would be 240, though 100 would be very low and could scarcely be called whisky. In answer to a question put by the magistrate Sir James Dewar said that if pot-still whisky were sent to London and mixed with patent-still spirit it would not be Scotch whisky. Mr. Tatlock, the public analyst for Glasgow, re-called, said that pot-still whisky was unwholesome until matured by age, whilst patent-still spirit was "beautifully light," which drew from the magistrate the suggestion that there would be no harm in stating upon the bottle the words that "this whisky was composed one-third of nasty pot-still spirit and two-thirds of beautiful patent-still spirit." The witness was understood to assent to this but with the adjectives "nasty" and "beautiful" deleted. The hearing was again adjourned.

HERNIA OF MECKEL'S DIVERTICULUM.

IT is rare to find the vermiform appendix in a hernial sac and yet the appendix is normally present in the body and is placed close to both the internal abdominal ring and the crural ring. It is still more rare to find Meckel's diverticulum in the sac of a hernia and this is what we should expect, for the diverticulum occurs in only about 2 per cent. of all bodies examined and therefore the probability of its appearance in a hernia is 50 times less than is the case with a vermiform appendix, even without taking into account the fact that the diverticulum is as a rule not very near to the usual sites of hernial protrusions. This form of hernia was first described by Littré more than 200 years ago, in 1700, and has been called Littré's hernia, but much confusion has been caused by partial enterocele having also been named Littré's hernia; and, indeed, there is reason for thinking that Littré was the first to describe this condition also, though from the clearer description of a partial enterocele which was given by Richter in 1779 Richter's name is deservedly applied to the latter. In spite of its great rarity cases of Littré's hernia or hernia of Meckel's diverticulum have been recorded from time to time. Even when only the diverticulum is included in the sac and strangulation occurs, all the ordinary symptoms of strangulated hernia may be present and yet there is no actual obstruction to the onflow of the intestinal contents. Until recently this form of hernia was only seen in cases of strangulation. In the present issue of THE LANCET we publish an account of a case of Littré's hernia, recorded by Mr. C. B. Howse, and in this the variety of hernia was recognised during the operation for radical cure. Now that the operations on non-strangulated herniæ are common we may expect to find more cases of Littré's hernia.

THE medical officer of health of the Cape Colony states that for the week ending Dec. 23rd, 1905, the condition of the colony as regards plague was as follows. No case of plague in man or in other animal was discovered throughout the colony except at Port Elizabeth, where out of 307 rodents bacteriologically examined two mice proved to be infected by plague. As regards the Mauritius a telegram from the Governor received at the Colonial Office on Jan. 19th states that for the week ending Jan. 18th there was 1 case of plague and 1 death from the disease.

THE committee of the Fifteenth International Congress of Medicine to be held at Lisbon has decided to postpone the date by which all scientific communications must be sent in until March 15th. The papers, together with a *résumé* of their contents in French, English, or German, should be addressed to the general secretary of the Congress, Professor Miguel Bombarda, New School of Medicine, Lisbon.

A SERIES of 12 lectures will be delivered by Dr. Francis Warner under the auspices of the National Association for the Feeble-Minded at Denison House, Vauxhall Bridge-road, London, S.W., beginning on Monday, Jan. 29th, at 6 P.M. The lectures are in connexion with the extension lectures of the University of London.

THE annual general meeting of the Neurological Society of the United Kingdom will be held at 11, Chandos-street, Cavendish-square, London, W., on Thursday next, Feb. 1st, at 8.30 P.M. Mr. W. Bateson, F.R.S., will read a paper on Mendelian Heredity and its Application to Man.

A WORKING COLONY FOR FEEBLE-MINDED CHILDREN.—At a meeting of the Metropolitan Asylums Board on Jan. 20th a letter was read from the Local Government Board assenting to the proposals of the managers (1) to use the Bridge School, Witham, Essex, as a working colony for male feeble-minded cases, when that institution is no longer required for ringworm cases; and (2) to the transfer on medical advice of children from the London homes for feeble-minded to the working colony before such children attain the age of 16 years on the understanding that no such transfers will be made until such additional accommodation for feeble-minded cases has been provided. The Board stated that it assented to the second proposal provided that only cases were sent which are either unlikely to improve any more in subjects taught at the special schools of the London County Council or to improve so little as to make their retention in the ordinary homes no longer advantageous, and further, that suitable classification of the children removed according to sex and age and apart from adults was carefully attended to.

THE NOSE IN LITERATURE.

BY P. TETENS HALD, M.D.,
ASSISTANT SURGEON TO THE EAR, NOSE, AND THROAT CLINIC THE KOMMUNE HOSPITAL, COPENHAGEN.

IT is partly in order to draw attention to the writings of an English colleague, dead these many years, that I venture to lay the following lines before the medical public. By chance I picked up some time ago a book, now, as I suppose, only little known, the "Illustrations of Sterne," by John Ferriar, M.D. He evidently was, as so many of the profession have been, a hunter of curiosities and as I have worked a little in the nose and throat line his collection of quaint quotations concerning the nose appealed very much to me. Once my interest being stirred I made further researches in the same direction, some of which are reproduced in the following lines. I hope the reader will not find them too tedious.

Perhaps there has never existed a man who has written of the nose in more laudatory terms than the Bologna surgeon Tagliacozzi. In his "Cheirurgia nova," where he describes the Italian rhinoplastic operation, is to be found a very entertaining chapter with the heading, "De narium dignitate," in which he expresses himself in the following manner[1]: "Nares igitur, ut earum dignitatem consideremus, quantum pulchritudini splendoris afferant, id satis explicari non potest. Quamvis enim cuique faciei partium suus honor, sua gratia adsit, quae suavi rythmo dispositа, in augustissimam formae speciem conspirent, peculiaris tamen nasi ratio est, ut concinnus si fuerit, summopere faciem commendet; distortus vero, aut pravus aut simus aut vulnere notatus totam formæ honestatem evertat." And in another place: "Inest praeterea naso nescio quid augustum et regium; an quia forma corporis et animæ decoris index sit: an quia peculiaris quaedam imperandi dexteritas et prudentia in eo eniteat."

In order to show how essential the nose is in making a figure beautiful or ugly Tagliacozzi brings forth the two following historical incidents. In the first a somewhat uncanny part is played by a Byzantine courtier, "qui abreptæ ab Roberto filio Petri Autisidosiensis nares sponsæ praecidit, ut qua causa allectus fuerat Robertus ad sponsæ raptum, eadem spoliatus graves aculeos doloris persentisceret." This really appears to have occurred, though the quaint stating of the motive must be answered for by Tagliacozzi himself alone.[2] About the historical truth of the next narrative, however, I feel happy to be able to entertain some doubt, as otherwise it would form a rather heavy item on the bill run up in former times in England by some of my ancestors. "Sic sancta Eba, regii sanguinis Angla, Colymbaniensis monasterii praeses, ut funestam irruentium Danorum libidinem a corpore suo averteret, una cum caeteris religiosae illius vitæ comitibus nares sibi obtruncavit, quo vulnere, non tam indecoro quam honesto, castitatem Deo promissam casta foemina redemit."[3] Modern historians at least[4] refuse to believe in this. Whether the French nuns, who according to Hovorka[5] on a similar occasion also cut off their noses, really have done so I do not know, having been unable to find his authority. If they have done it they probably have brought about what they wished for, for, as Tagliacozzi says: "Narium apice abscisso panduntur sinus et partium internarum recessus, vasti patent hiatus et cavernae, instar antri Tryphonii[6] obscurae; horrendum certe et abominandum aspicientibus spectaculum."

As an additional reason why the nose should be honoured Tagliacozzi mentions that it forms a sign of recognition and proves this by a quotation from Virgil. He might as proof have chosen the following story from a remarkable book then very much in vogue—viz, Henri Estienne's "Apologie pour Hérodote."[7] Dramatis personæ are: "Un seigneur de Bourges nommé Boyuerd," and several witnesses bribed to give evidence against him in a case of murder; these latter, however did not remember their lesson correctly: "Car au lieu que pour une des meilleures marques pour recongnoistre ledict Boyuerd, on leur avoit dict qu'il avoit un nez faict à manche de rasoir, interrogez separément par le président à quoy ils le recongnoistroyent, respondirent tous d'un mesme accord qu'ils le pourroyent recongnoistre aisément à un coup de rasoir qu'il avoit eu sur le nez. Tellement que leur estant confronté ledict Boyuerd contre lequel ils entendoyent deposer, dirent que ce n'estoit pas cestuy-la, pource qu'il n'avoit point de cicatrice sur le nez et ainsi estans descouverts, furent pendus: et le subornateur et faux accusateur fut decapité, et mis en quatre quartiers: mais en effigie: qui fut un grand avantage pour sa personne."

How far back the prepossession against mis-shapen noses dates is demonstrated by the Levitical law that excludes from the office of priest those endowed "vel parvo, vel grandi, et torto naso."[8] However, more quaint notions about noses have been ascribed to the Jews than really ought to be. So Ferriar[9] has (after Camerarius[10]) the following quotation: "Atque hoc quidem epitheton inter caetera Deus sibi arrogat [Exodus xxxiv.], qui Mosen alloquens proprietatibus decem hanc adjicit (.....[11]), id est magno naso, ut Hispanica editio Complutensis et recentior Antverpiensis ad verbum exprimunt et aliis qu que Bibliarum locis Deus ita vocatur quod omnes interpretes exponunt patientem, &c." This is an example of that most detestable sort of curiosities, I mean the spurious. For first, I have the statement of learned Judaists that the words in Hebrew are quite incorrectly quoted and that the genuine text means, "long as to the nostrils," i.e., a being that waits a long time before it sniffs for scorn, ergo, patient; and secondly, neither the Editio Complutensis of 1514–17 nor the Antwerp edition (Plantin 1569–73) has any other translation than the usual.

As it is well known, the Romans have given name to a certain form of aquiline noses. Nevertheless, one finds that they did not think crooked noses beautiful. So Clitipho mentions the bride offered him by his mother in the following uncomplimentary terms[12]:

"Rufamne illam virginem
Cæsiam, sparso ore, adunco naso? Non possum, pater."

Nor did they like long noses; see, for instance, the catalogue of a Roman matron's attractions and defects[13]:

"O crus, O brachia! Verum
Depygis, nasuta, brevi latere ac pede longo est."

Generally speaking, the nose played a very great, and to us sometimes strange, part in the language of the Rome of antiquity. It is, for instance, intended as a great praise when Horace says about the poet Lucilius that he was possessed of a well-blown nose[14]:

"Facetus,
Emunctæ naris, durus componere versus."

The word long-nosed (nasutus), nay, nasus itself, stands for acumen and criticism. Perhaps this may be accounted for as notions produced by a popular doctrine of physiognomics. This science has from antiquity down even to our days had its fervent votaries, but presumably none more persuaded than Lavater. It is nearly incredible what he is able to read out of a physiognomy. So by the discussion of Benjamin West's profile he expresses himself literally as follows:[15] Bis zum Nasenloche geht der reinste Ausdruck von Geist—Er sinkt schon, erlöscht schon ein wenig unter der Nase; nicht dasz der Umrisz unedel werde; aber er sinkt von Grösze gegen Mittelmäszigkeit herab." His enthusiasm induces him in another place,[16] where he has given a description of the nose *comme il faut*, to declare: "So eine Nase—ist mehr werth als ein Königreich." I wonder only how he would have valued a nose like that of Pamphagus[17] that might be used as an extirguisher, a pair of bellows,

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[1] Gasparus Taliacotius: Cheirurgia nova, &c. Francofurti, 1598. Caput quintum, p. 77.

[2] Jeann. Baptista Egnatius, the authority of Tagliacozzi, only mentions the tragic event in very short terms (De Caesaribus, lib. iii.; Venetiis, 1516, lib. ii., Robertus fil).

[3] See most of this in Matthaeus Westmonasteriensis Flores Historiarum, &c., Francofurti, 1601, p. 161.

[4] For instance, the Rev. W. Hunt, D.Litt., President of the Royal Historical Society, in Dictionary of National Biography, vol. xvi., London, 1888, p. 342.

[5] O. Hovorka: Die äussere Nase, Wien, 1893, S. 6.

[6] Qu. Trophonii.

[7] The edition of La Haye, 1735, tome i., p. 379.

[8] Vulgate, Leviticus xxxi.

[9] Illustrations of Sterne, London, 1798.

[10] Ph. Camerarius: Operæ horarum subsecivarum, Francofur 1644, Centuria prima, p. 253.

[11] Here some Hebrew characters.

[12] Terentius: Heauton Timorum, v., 5, 17–18.

[13] Horatius: Satiræ, Lib. i. 92–93.

[14] Horatius: Satiræ, Lib. i., 4, 7–8.

[15] Joh. C. Lavater: Physiognomische Fragmente zur Beförderung der Menschenkenntniss und Menschenliebe. Leipzig und Winterthur, 1775–78. Dritte Versuch, S. 180.

[16] Loc. cit., Vierte Versuch, S. 257.

[17] Desid. Erasmi Roterodami: Colloquia Familiaria. Roterod., 1683, p. 22.

boarding-pike, a trumpet, a pick-axe, a scythe, an anchor, a fork, or a fishing-book.

But it was not only Lavater's eyes that possessed such singular discerning powers, also his nose appears to have been unique.[18] "Ich glaube, dass ein feiner Geruch die Nationen riechen—und vielleicht eher unterscheiden könnte, als das Gesicht. ..... (Mein Geruch) ist fein genug, das Daseyn oder Naheseyn gewisser Krankheiten zu bemerken, und wenn ich in gewisse leere Zimmer eintrete, so kann ich manchmal mit Zuversicht sagen: 'Hier muss ein Hektikus oder Maniakus, oder einer, der im Begriff ist es zu werden, gewesen seyn.' Und zwar waren mehrmals solche da gewesen, an deren Gesichte sich die Krankheit noch nicht zeigte. So kam mir einmal ein gewisser Geruch mit dem Besuch eines Fremden in mein Zimmer, den ich natürlicher Weise für ganz individuell hielt und weiter nicht achtete. Mehr als ein halb Jahr lang hernach kam mir derselbe Geruch, von dem ich ein halb Jahr lang keine Spur mehr hatte, so wie ich vorher keine davon gehabt hatte, wieder mit einem Fremden in mein Zimmer. Bald vernahm ich, dasz dieser aus derselben Gegend kam. Ich muszte also sogleich auf den Gedanken fallen, dasz es Nationalgerüche geben könnte."

One scarcely knows whether the author wishes assertions of this kind to be taken seriously or not. This doubt does not exist when we direct our attention to the following j cose theories as to the etiology of certain malformations of the nose. One of these theories is quoted by Ferriar[19] out of Bouchet's "Serées": "Ceste chaleur fait aussi, adjousta il encores, que les Mores sont fort camus, et diriez qu'on leur a coupé le nez sur le billot: cela procédant de la grande chaleur, qui ne permet pas que les os et les cartilages croissent beaucoup, comme venans d'une matière inutile et vacante: les petits enfans le confirment bien, lesquels estans chauds sont camus, ayans en leur jeunesse le nez fort court."

Another very widely spread theory is the one first, as far as I know, mentioned by Rabelais[20]: "Pourquoy, dist Gargantua, est ce que Frère Jean a si beau nez? ..... Trut avant, dist le Moyne. Selon vraye philosophie monastique c'est parce que ma nourrice avait les tetins moletz; en la laictant mon nez y enfondroit comme en beurre, et là s'eslevoit et croissoit comme la paste dedans la met. Les durs tetins de nourrices font les enfans camuz." This idea Sterne has eagerly taken up and developed.[21] "Now Ambrose Paraeus convinced my father ..... that the length and the goodness of the nose was owing simply to the softness and flaccidity in the nurse's breast, as the flatness and shortness of *puisne* noses was to the firmness and elastic repulsion of the same organ of nutrition in the hale and lively, which though happy for the woman, was the undoing of the child, inasmuch as his nose was so snubbed, so rebuff'd, so rebated, and so refrigerated thereby, as never to arrive *ad mensuram suam legitimam*; but that in case of the flaccidity and softness of the nurse's or mother's breast, by sinking into it, as into as much butter, the nose was comforted, nourished, plumped up, refreshed, refocillated, and set a-growing for ever." Sterne here quotes Ambroise Paré as his authority. Remembering the coolness with which Sterne has ascribed a grand folio, "De Nasis," to a never before or since heard of author, the great and learned Hafen Slawkembergius, one might feel tempted to think that also his assertion about Ambroise Paré was a hoax. But the great French surgeon really has written something of a similar kind and, as is clearly to be seen, in full earnest. In the chapter Des Mammelles et de la Poictrine de la Nourrice he says:[22] "Elle doit avoir la poictrine large et les mammelles assez grosses, et non lasches et pendantes, moyennes entre dures et molles. ..... D'abondant l'enfant imprime le bout de son nez à la mammelle: la trouvant trop dure se fasche, et ne veut téter, et quelquefois en devient camus."

In order not to become too tedious I am going to stop here. The most appropriate way of finishing I can think of is by quoting the well known lines:[23]

> "Nasutus sis usque licet, sis denique nasus
> Quantum noluerat ferre rogatus Atlans,
> Et possis ipsum tu deridere Latinum,
> Non potes in nugas dicere plura meas,
> Ipse ego quam dixi."

[18] Loc. cit., Vierte Versuch, S. 268 (in the note).
[19] John Ferriar, M.D.: Illustrations of Sterne, London. 1798, p. 113.
[20] La Vie très Horrifique du Grand Gargantua, chap. 40.
[21] Tristram Shandy, Book iii., chap. xxxviii.
[22] Les Œuvres d'Ambroise Paré, Lyon, 1623, p. 705.
[23] Martial: Epigramm., xiii., 2, 1-5.

THE DECLINING BIRTH-RATE AND FERTILITY OF MARRIAGE IN ENGLAND.

Two able papers on this important subject were read before the Royal Statistical Society on Dec. 19th, 1905; one jointly by Dr. Arthur Newsholme, medical officer of health of Brighton, and Dr. T. H. C. Stevenson, assistant medical officer to the Education Committee of the London County Council; and the other by Mr. G. Udny Yule, Newmarch Lecturer in Statistics, University College, London. The discussion on these papers was postponed and continued after the delivery of the President's address at the subsequent meeting of the society on Jan. 16th. Both these papers naturally treated the subject mainly from a statistical standpoint, with a view to analyse and if possible to explain the extent and true purport of recent changes in English marriage-rates and birth-rates. A careful study of these papers enforces two important and useful conclusions. In the first place that the crude birth-rate—that is, the proportion of registered births to population, unless duly corrected for the age-distribution of the population, very considerably understates the recent marked decline of the true birth-rate. The recent decline in the birth-rate has indeed caused a marked change in the age-constitution of the English population. The important bearing of varying age-distribution in different populations on marriage-rates, birth-rates, and death-rates has been urged by successive statistical superintendents at the General Register Office, and it is satisfactory to find that this fact is now very generally recognised by students of vital statistics. The second unavoidable conclusion to be deduced from these papers is that the recent steady decline of under-age marriages, and the somewhat general increase of age at marriage, causing a decreased proportion of young married women in the English population, accounts but for a very small part of the decline in the birth-rate.

Both papers, moreover, abundantly prove the existence of a marked and increasing decline in the birth-rate and in the fertility of marriage, that is in the proportion of births to a marriage. Dr. Newsholme's paper shows that the corrected birth-rate in England and Wales, which was 35·4 per 1000 in 1871, declined successively to 34·7 in 1881, 32·6 in 1891, and 28·4 in 1901, implying a startling increase in the rate of decline of fertility. With regard to what Dr. Newsholme and Dr. Stevenson style "social *felo-de-se*" it seems to be next to impossible to avoid the conclusion at which their investigation has led them. At the same time, however, it is well not to shut one's eyes to the fact that mathematical and statistical methods, even when handled as ably as they are in the two papers under consideration, are scarcely fitted to solve the problem of the true cause of this decreased and declining fertility of marriage in England.

There are many pessimists at the present time who, in the face of much cogent evidence to the contrary, persistently assert that the British nation is suffering from progressive physical deterioration. This assertion may, however, be true and if so it may quite possibly be the fact that this decline of fertility is, at any rate in part, one of the results of this physical deterioration. Careful study of these two papers and of the remarkable New South Wales report on the similar decline of fertility in that colony would, however, more probably lead to the conclusion that the true cause of this decline of fertility, here and elsewhere, is a serious decrease of moral stamina rather than the alleged increase of physical degeneration.

Mr. Yule's theory that economic factors are the main causes of fluctuations in marriage-rates and birth rates is more interesting than convincing. He states that having mathematically examined several individual factors in succession he finds that the movement of prices "is the only one that fulfils certain conditions which must hold good for the predominant cause of the changes in the marriage rate (if there be any single predominant cause) and that it does fulfil them fairly closely." As regards the marriage rate, Mr. Yule's figures appear to show that it rises with an increase in prices and also declines when they fall. That high prices should promote marriage seems paradoxical but high prices probably imply high wages and full employment and Mr. Yule's tables certainly support his theory.

It is difficult, however, to agree with this statistician when he further asserts "that the course of prices has been in some way, directly or indirectly, an important cause in the changes that have taken place in the reproductivity of the race." It is beyond all doubt that this country, speaking generally, and including all classes, now enjoys a far higher standard of material prosperity and comfort than it did 25 years ago before this decline in the birth-rate set in. This seems to forbid us to attribute correctly this decline in the fertility of our race, except most indirectly, to economic causes.

There is an important branch of this subject which, so far as is possible, is fully and carefully treated in both the papers under notice—the inquiry whether this decline in the fertility of marriage is equally or unequally shared in the various social grades. It is not necessary to press the importance of this question to the future of our race which has been so well urged and fully discussed by Professor Karl Pearson. Unfortunately, the construction of trustworthy class vital statistics is at present fraught with almost insurmountable difficulty. The authors of both papers have endeavoured to estimate the relative decline of the birth-rate in different classes of our population by comparing the statistics of different metropolitan boroughs in which the varying proportion of domestic servants indicates a greater or less degree of material prosperity. Dr. Newsholme and Dr. Stevenson show in their paper that the London corrected birth-rate in 1903 ranged from 31·6 per 1000 in a group of boroughs in which the domestic servants did not average more than ten in 100 families, to 20·5 per 1000 in the group of well-to-do boroughs in which the domestic servants averaged above 66 in 100 families. It may be noted, however, that in the four other groups, comprising 65 per cent. of the entire population, the corrected birth-rate only ranged from 25·4 to 25·8 per 1000. It should also be pointed out that the group in which the high birth-rate occurred included several districts in East London containing a large proportion of alien Jews and that the high birth-rate therein has probably a racial rather than a true class signification. Unfortunately the authors of this paper have not found it possible, or at any rate have not attempted, to give any figures for these groups of London districts at a previous date and thus to throw light on the question whether the recent decline in the birth-rate has been greater in the well-to-do than in the poorer districts. In view of the unquestionable importance of this branch of the inquiry it may be hoped that the General Register Office will find means to furnish material for a closer and more satisfactory study of class birth-rates than is at present possible.

It seems desirable, in conclusion, to refer briefly to a fact that is clearly brought out in these two papers—namely, that the decline in the birth-rate is not due to the steady increase of the urbanisation of our population and that in point of fact the decline between 1881 and 1903 was actually greater in the selected rural counties than in the selected urban counties. It is stated that the decline in the urban birth-rate during these 12 years was only 15 per cent., while it was 18 per cent. in the selected rural counties. The fact, however, remains that the corrected birth-rate is still distinctly higher in our rural than in our urban populations, although there is no obvious natural explanation of this lower birth-rate in towns.

MEDICINE AND THE LAW.

The Smell of Fried Fish as a Nuisance.

A RECENT motion before Mr. Justice Kekewich in the Chancery Division for an injunction against persons carrying on a fried-fish business in Dean-street, Soho, ended in an admission that a nuisance was caused and an undertaking that it should be abated, subject to an agreement by the plaintiff not to enforce the injunction granted to him for a fortnight. The defendant, Shapnitzki by name, carried on his trade on the ground floor and the plaintiff, Abraham, who conducted a business, said to have been established for over a century, in embroidering uniforms, complained that the penetrating and offensive smell of the fish fried in grease not only made his workpeople ill but impregnated the clothes which they wore and those upon which they worked so that the wearers of them, including his customers, strongly objected. Difficulty had apparently been found in tracing the course of the odour and in ascertaining why it reached the workshop upstairs so readily. The question had, however, been solved the day before the case came into court, when it was found by a surveyor that there were two chases or channels passing down the interior wall from the upper part of the house to the basement where the fish was fried, one of which contained a rainwater pipe and the other a soil pipe. The precise condition and destination of these pipes are not mentioned in the report we have seen of the hearing before Mr. Justice Kekewich, but considering the not very desirable course which they appear to take it is to be hoped that the soundness of the soil pipe itself came under the observation of the surveyor.

Robbing Out-patients at Hospitals: Singular Story.

A new and curious form of thieving has earned six months' hard labour for a woman who, if she had not carried on her evil practices quite so assiduously, might apparently have escaped detection for some time. Her method appears to have been to borrow a neighbour's baby and to take it to the out-patient department of a hospital as if for treatment. When leaving the hospital she simply placed the bogus patient in the perambulator or mail-cart in which some other little patient had been brought and departed. In this way she had succeeded in stealing at least 20 of these vehicles which she afterwards pawned, the institutions which she patronised being the West London Hospital and the Children's Hospital, Paddington-green. She appears to have confessed the regularity and persistence of her thefts, no other course being open to her as nearly 20 stolen perambulators and mail-carts were recovered by the police. The thefts were certainly ingenious.

A Sham Medical Practitioner.

Mr. McConnell, K.C., has passed a sentence of 12 months' imprisonment upon a man described in the calendar under the name of Forbes, a clerk, who had committed wholesale frauds under the titles of Baron Forbes and Dr. Forbes. The evidence of Detective-sergeant Bex with regard to the personation of a medical man by the prisoner is to be noted by any who may desire to employ alleged medical men of whom they know nothing without verifying their supposed qualifications. The detective stated that the prisoner had been a student at the Middlesex Hospital in 1879 but had not qualified. He had been to the Gold Coast, where a medical man of the name of Forbes was practising at the time whom he had probably met there. In 1893 he returned to England and since then had personated the gentleman mentioned, increasing the age which he assigned to himself for this purpose. He had been employed at various times by a firm of wholesale druggists and by several medical men on the strength of his pretended qualifications. Mr. McConnell, in passing sentence, described this conduct of the prisoner as one of the worst features of the case and the jury expressed their approval of this view.

A Garbage-monger Fined £50.

At the Guildhall police court recently a fine of £50 with £5 5*s.* costs was inflicted by Alderman Sir Joseph Renals upon a butcher at Llanelly. The defendant had bought for 8*s.* a pig which, considering the size of its frame, should have weighed at least 400 pounds. As a matter of fact, it weighed 249 pounds and the price given was equivalent to about 3*d.* per stone. Dr. W. Collingridge described the carcass as much wasted by tuberculosis and said that in every part its condition was disgusting. Sir Joseph Renals decided to treat the case, though "as wicked a one as he had ever had before him," as one of gross carelessness, and the butcher escaped prison. The frequency with which these cases are noted in our columns speaks not only for the vigilance of Dr. Collingridge, the medical officer to the corporation, but proves that in the matter of public health many purveyors of provisions to London are criminally ignorant.

HYGIENE OF COTTAGES IN AN AGRICULTURAL DISTRICT.

THE fact is too well known to need further emphasis that in many respects the large towns in England possess hygienic advantages which are absent in rural neighbourhoods. The domestic environment of the very poor in great cities too often abounds with serious faults and dangers, while the town workman, on the other hand, obtains systematic water-supply and drainage and a more rigid supervision

of the sanitary conditions under which he lives. The pure air of the country and the undefiled spring, which should mean so much in the preservation of health, too often count for nothing because the country labourer does not live in a manner to benefit by them. His home defiles them both. This is a general statement and many instances, increasing we hope and believe in number daily, could be adduced where the home of the agricultural labourer is most carefully planned and maintained, but in purely agricultural parts of England the labourer's cottage is too often lacking in proper accommodation and is in a deplorable sanitary condition.

We are led to these reflections—similar, we are aware, to many that have appeared in our columns—by a letter from a frequent correspondent which we may here quote. "Having been on a visit recently," he writes, "to a purely agricultural district in the Eastern counties, I availed myself of the opportunity to inspect, in a superficial manner, of course, certain labourers' cottages which attracted my attention. I made no sanitary inspection and had no *locus standi* from which to do so. I merely used my eyes and nose and I learned sufficient to warrant an expression of opinion the reverse of respectful to rural England. I may mention that I was brought up in the district but it happened that I had not visited it for about ten years. I found that on the whole the cottages were in a better sanitary state than when I was last in the neighbourhood, but there was such ample room for improvement that I could not feel cheered by the progress made. A typical labourer's cottage of the worse kind in that part of England is usually built of clay lumps; if bricks are used they are always of an inferior kind. The cottage contains, as a rule, two living rooms and two bedrooms, though sometimes the separate accommodation is less. The rooms are low and the windows are small and seldom opened, the floors of the living rooms are of brick, generally damp, and in a bad state of repair. The sleeping rooms are ill-lighted and ill-ventilated owing to the smallness of the windows and the lowness of the ceiling, and the roof is too often in a defective state, freely admitting rain and wind. If the cottage is structurally in a fairly good condition, and the household is small, no complaints are likely to be made; but if there are many children, as they grow up, overcrowding will lead to general impairment of the health of the family and it will be hardly possible to provide such separate accommodation for the boys and girls as decorum would suggest. Rheumatism is a disease to which the agricultural labourer is peculiarly liable. His predisposition to it may be accounted for principally by the exposure to vicissitudes of weather which is inseparable from his daily work and partly to the depressing influence of the draughty, damp, overcrowded cottage to which he returns in the evening. If he were better housed he might then obtain at home such rest and comfort as would counteract the fatigues of the day, but at present he can hardly count upon this. Overcrowding, again, not only predisposes to pulmonary tuberculosis among all the occupants of the cottage, but among the younger ones it creates a special liability to the spread of whooping-cough, scarlet fever, measles, and certain parasitic skin affections. It might be thought that a cottage in the country, even if it presented structural defects, would at least have the advantage of healthful surroundings, but the facts are only too often incompatible with this ideal. In almost all the cottages which I visited open wells are the chief sources of domestic water-supply. Many of such wells present every possible drawback from a sanitary point of view, being not only surface wells but placed in close proximity to the privy and the pig-sty. If the well is in the garden the result is practically the same, for the privy and the pig-sty are the source of the manure with which the garden is fertilised."

A well-known American medical man, Dr. William C. Daggett of New Haven, read before the Connecticut Medical Society in the spring of 1904 a paper in which he insisted that the source of urban typhoid fever must be sought in the country, and that to abolish the disease the work of sanitation should be initiated in the rural districts. He contended that visitors to the country brought back typhoid fever to the towns and that the disease was also conveyed by the agency of milk and vegetables. In his opinion the privies of farm-houses and remote villages were the principal starting-points of epidemics of typhoid fever occurring either in their immediate neighbourhood, or more probably in some distant town the water-supply of which has been infected by the privy. Of course, the conditions of the agricultural districts of Great Britain and of the United States are by no means alike and possibly Dr. Daggett's view of the situation may be too gloomy, but the water-supply of many country cottages is seldom, if ever, sufficiently protected against the risk of contamination. Mr. Rider Haggard has pointed out in forcible terms that one of the reasons which induce the rural population to migrate to the towns is the difficulty of obtaining proper house accommodation on reasonable terms in country districts. The question, therefore, of providing agricultural labourers with good cottages would seem to be one of national importance. The proletariat have made so definite an answer to the questions asked at the recent polls that the new Government will owe to such matters as the housing of the rural poor particular attention.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 26th, 1828.

A correspondent has favoured us with the following witty prospectus.

"NEW MEDICAL JOURNAL,

On improved Principles.

THE public are respectfully informed, that on Saturday, January 26, 1828, will be published, the first number of a new Medical Journal, to be entitled,

THE ACTUAL CAUTERY.

The great object of the associated editors, is the earliest possible dissemination of '*sound medical* and *chirurgical* knowledge' throughout the universe; and all contributors may rest assured, that within ten minutes of the first discovery of any fact in medicine, surgery, and the collateral sciences, it shall be put to press, and with all possible haste made known to the public.

The office will be open at all hours for the reception of communications, and the clerk is directed to note carefully, by a stop-watch, the minute at which they are received, in order to ensure to gentlemen the priority of their discoveries.

The name of this Journal will be a sufficient guarantee to the public at large, of the determination of the editors to spare no individual in any department of the profession. They will, however, not be answerable for libels, in a court of law, but have engaged, at a high salary, a gentleman from the sister kingdom, to give all other satisfaction that may be required. Another object of this Journal, is to develop the latent causes of the present convulsed, and distracted state of the profession in this country, on which point the medical world have of late been most grossly misled.

Attached to no party, tools of no junto, organs of no faction, actuated by the purest public spirit, disdaining all reward, save the gratitude of posterity, the determination of the editors is to outstrip the '*March of Intellect*,' to set at rest every disputed point in medicine, and to reduce the science to mathematical certainty.

One of the new features of this Journal is, that each number will contain at least *two* leading articles; the reviews will be spirited; no epigram will be inserted that has not *some* point; and the lives of eminent practitioners will be given, as soon as they are known to be '*in Articulo Mortis*.'

Correspondents have been engaged, at a great expense, in all parts of the world, except '*Otaheite*,' where arrangements will be shortly entered into with the most distinguished *Fellows* of the Royal College of Physicians in that country.

N.B. The Journal will be published regularly on Saturday mornings, but may be had in all the shops on Thursday at 2 o'clock. Members of parliament are engaged to frank for country circulation.

P.S. The different colours of the rainbow being already occupied by publications pretending to similar character, the present Journal will appear alternately in a black and white cover, to imitate which will be deemed '*literary plunder*.'

The unsold copies of this Journal, bound in calf, at the

end of the year, will be distributed among such of the correspondents as have favoured the editors with the longest reports, cases, essays, &c. &c. during that period of time.

*** All communications, for the present, to be addressed to MONSR. TONSON, at our office, *Warwick Street*, Golden Square."

THE REPORTS OF THE ASYLUMS OF THE WEST RIDING OF YORKSHIRE FOR THE YEAR 1904.

THESE asylums number five, four of which are for the pauper class and the fifth, at Scalebor Park, accommodates private patients. The reports of all are presented now in one volume which opens with a report from the West Riding asylums committee. On the recommendation of this body the county council of the West Riding adopted a resolution in which alarm was expressed at the progressive increase of lunacy in the country and the presentation of a memorial to the Government was agreed to praying that a Royal Commission should be appointed to inquire into the causes of such increase and the steps which should be taken to arrest the same. This memorial was duly presented and a copy of it was sent to the County Councils' Association, the executive council of which adopted much the same resolution as the above. No action was taken by the Government. The total net increase during 1904 of patients chargeable to the Riding was 106. Table No. 1 deals in a very convenient way with the statistics as to admissions, discharges, and deaths in the three old asylums (Wakefield, Wadsley, and Menston) annually for a period of ten years (1895-1904) with annual averages. The admissions during 1904 for the three institutions in the order named were 505, 437, and 378. The annual average percentage of recoveries on admissions for the ten years was respectively 40·07, 40·7, and 39·91. These are satisfactory rates. The percentage of late years at Wakefield is very much the same as at the other asylums, from which it would seem that up to the present the greater facilities for treatment which have of recent years been provided at that asylum have not been productive of better results. It is true that in 1904 the percentage recovery-rate at Wakefield was 44·55 as compared with 39·3 and 35·7 at the other asylums but these figures cover only one year. It is also the case that for 1903 the recovery-rate at Wakefield was 49·9 per cent. as against 35·3 per cent. for county and borough asylums in general. The average number resident in 1904 was for Wakefield, 1811; for Wadsley, 1652; and for Menston, 1595. The annual average percentage of deaths on the annual average number resident during the ten years was respectively 10·97, 11·4, and 11·51, the figures for county and borough asylums for the same period being 10·11.

The average annual increase of the insane of the West Riding in asylums during the past ten years is 128, whereas in workhouses there has been a decrease amounting on the average annually to seven. The usual tables of medical statistics are given for the different asylums; if these could be collated and a summary of the whole provided the result could not fail to be of great value, having regard to the amount of material available. The tables of causation of insanity at the three asylums mentioned are based in two cases upon the statistics of ten years and in the third case of 16 years and are therefore very useful. The percentage incidence of heredity, direct and collateral, is at Wakefield 32·7 and at Menston and Wadsley 22·8 and 23·1 respectively. When it is remembered that the statistics are based upon the admissions of several years this discrepancy between the first-named institution and the others requires some explanation. The population drawn from must be much the same in nature at all three asylums, and it seems not improbable that at Wakefield the histories are more fully inquired into. We notice that "other bodily diseases or disorders" are assigned as causes in 16·1, 19·2, and 23·3 per cent. respectively in the three asylums. It would be of interest to know the kinds of disease which were operative. Alcohol was assigned as a cause in 23·1 per cent. of the Wakefield cases as against 14 and 16 per cent. in the other two asylums.

Turning to the reports of the medical superintendents, we find Dr. J. G. McDowall of Menston Asylum referring to an excess of male patients over accommodation to the extent of 31, which has, however, been largely counteracted by utilising the infectious hospital for cases suffering from tuberculous disease and diarrhœa, and by a re-arrangement it was found possible to add 16 beds to the accommodation. The asylum being full notice had to be given to the unions that none but acute cases could be received. A much trusted patient who had never exhibited any suicidal tendencies was found kneeling in a bath dead, his face immersed in a few inches of water. Death was, it is thought, due rather to the sudden occurrence of an epileptic fit than to suicide. A coroner's jury considered that the patient drowned himself whilst insane. Another man, who was removed from the asylum contrary to the medical superintendent's advice, killed himself with a razor the day following discharge. Why did the asylum committee discharge the patient contrary to the medical officer's advice? Its consent was necessary if, as we gather, the patient was a pauper. Fortunately, committees very seldom act thus. Two deaths were due to enteric fever and five to "enteritis and colitis." The Commissioners in Lunacy report 34 attacks of dysentery to have occurred since their last visit.

Dr. W. S. Kay of Wadsley comments, as in previous reports, upon the large proportion of hopeless cases amongst the admissions—cases debilitated and paralysed. Colitis was prevalent on the overcrowded male side, several very severe cases occurring, of which 13 died.

At Wakefield the medical superintendent, Mr. W. Bevan Lewis, also remarks upon the hopeless character of a large proportion (41·58 per cent.) of the admissions. These cases are tabulated and comprise cases of imbecility, epilepsy, general paralysis, and senile and organic brain disease. This is regrettable considering the unusually good manner in which this asylum is equipped to deal with curable cases. A large proportion of harmless and senile cases crowds up the available space; these might be in the union infirmary or with their friends. The admission-rate of senile cases is shown to be not at all excessive but they tend to accumulate. In his last report Mr. Lewis discussed at length the pathology of colitis or asylum dysentery and opposed the ordinary views which regard this disease as caused by defective sanitation, overcrowding, dietetic defect, or these conditions combined. Whilst not contesting the fact that a specific organism is present he considers that the intestinal tract is rendered vulnerable to this by the chronic constipation which he believes to be present in these cases and which is brought about by atony and torpor of the bowel wall. Mr. Lewis has put to the test the method of prophylactic treatment, by the administration of regular doses of saline aperient, which he referred to in the last report, and the figures which he gives, and which cover the period from April, 1902, to July, 1905, are certainly striking and show a great diminution in the number of cases of the disease since treatment was begun. A more prolonged experience, supplemented by the experience of other asylums, should be most instructive. At the hospital for acute cases of this institution good work is in progress. Hydro-electric treatment in the form of the sinusoidal current gives satisfactory results; we find that of 54 cases treated in 1903 and 1904 and almost entirely composed of persons in states of mania, melancholia, and stupor, 35 recovered and eight were relieved. Mr. Lewis considers the electric bath a most useful accessory to treatment, especially in cases of melancholia and stupor; and this is the experience of certain other alienists. But before these results can be viewed in their true light we require a series of control cases which shall have been submitted to the ordinary "expectant" treatment of asylums and treatment by the warm bath without electricity. Static electricity and high-frequency methods are also employed; of 20 cases so treated in 1903 and 1904 11 are reported to have recovered and four were relieved. Here, again, cases of melancholia and of that state with stupor appear to be best adapted for treatment. Actino-therapy (the x rays and lupus lamp) has been employed for lupus and rodent ulcer with gratifying results. This asylum has an idiot and imbecile department with accommodation for 70 male cases, which was reported full in 1903. It is proposed to provide similar accommodation for imbecile girls at one of the asylums. Special teaching is given to weak-minded children in this department with good results, as instanced by cases reported. The plan ought to be followed widely in asylums. Mr. Lewis advocates a custodial home of this kind for each large county or group of counties from which if

sufficiently improved the children might be removed to a county industrial colony. The out patient department of the asylum shows much activity, 200 cases being under treatment, a very large proportion of whom suffered from epilepsy and associated nervous and mental disturbances. Good work continues to be done in the pathological laboratory. The report shows that the work of this institution continues to be pervaded by the same scientific spirit and actuated by the same high ideal which have so long procured for it a distinguished position.

In June, 1904, the fourth county asylum for the West Riding was opened at Storthes Hall, Huddersfield. Dr. T. S. Adair, the medical superintendent, reports that at the close of that year 132 patients were in residence, having been received mainly from the sister asylum at Wadsley. From the report of the Commissioners in Lunacy we find that a hospital for acute cases with four wards on each side, to accommodate 104 patients of each sex, has been provided at this asylum, from which we conclude that the asylums committee thinks favourably of this plan which it put into practice first at Wakefield. In this hospital the proportion of nursing staff to patients for day duty will be the high one of 1 to 5.

The third annual report of the West Riding asylum for private patients at Scalebor Park is presented by Dr. J. R. Gilmour, the medical superintendent. The average number resident daily was 108, as compared with 62 in 1903. 119 patients were in residence at the close of 1904, during which year 112 were admitted. The recovery rate on the admissions was 26·19 per cent. for the males and 48·57 per cent. for the females; the female cases were of a more favourable class for treatment. Of the 13 deaths none was due to tuberculosis. Heredity of insanity was present in 38 of the admissions. 96 per cent. of the patients were paying from 25s. to 42s. per week. The lowest scale of payment was 25s.

VITAL STATISTICS.

ANNUAL BIRTH-RATES AND DEATH-RATES FROM THE SEVEN CHIEF EPIDEMIC DISEASES IN ENGLAND AND WALES DURING 1905.

—	Annual rates per 1000 living: Births.	Deaths from all causes.	Deaths from seven chief epidemic diseases.	Infant mortality:—Annual death-rate of infants under one year per 1000 births.
England and Wales	27·2	15·2	1·52	128
76 great towns	28·2	15·7	1·68	140
141 smaller towns	26·9	14·4	1·50	132
England and Wales less the 217 towns	26·3	14·9	1·09	113

NOTE.—These rates are subject to revision.

We are indebted to the Registrar-General for the above death-rates for the urban and rural areas of England and Wales in the year 1905. We publish them for the information especially of medical officers of health who require these data for the compilation of their annual reports.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8084 births and 4800 deaths were registered during the week ending Jan. 20th. The annual rate of mortality in these towns, which had been 17·4, 18·3, and 16 7 per 1000 in the three preceding weeks, further declined last week to 15 8 per 1000. In London the death-rate was 15 5 per 1000, while it averaged 16 0 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·7 in Smethwick, 7·3 in Walthamstow, 8·6 in King's Norton, 8·9 in Burton-on-Trent, 9·4 in Willesden and in Portsmouth, 9·6 in Hornsey, and 10·1 in Leyton; the highest rates were 19·4 in Hastings, 19 5 in Merthyr Tydfil, 20·2 in Birmingham and in Liverpool, 21·1 in Newport (Mon.), 22·1 in Swansea, 24·3 in Sunderland, and 28·2 in Preston. The 4800 deaths in these towns last week included 369 which were referred to the principal infectious diseases, against 405, 464, and 389 in the three preceding weeks; of these 369 deaths, 108 resulted from measles, 92 from whooping-cough, 60 from diphtheria, 49 from scarlet fever, 36 from diarrhœa, 23 from "fever" (principally enteric), and one from small-pox. No death from any of these diseases was registered last week in Hastings, Great Yarmouth, Burton-on-Trent, Wolverhampton, Walsall, King's Norton, Coventry, Grimsby, Burnley, York, or Tynemouth; among the other towns the highest death-rates from the principal infectious diseases were recorded in Tottenham, Reading, Handsworth (Staffs.), West Bromwich, Blackburn, Preston, and Gateshead. The greatest proportional mortality from measles occurred in Tottenham, Blackburn, Preston, Leeds, and Swansea; from diphtheria in Wallasey, St. Helen's, and Stockton-on-Tees; from whooping-cough in Reading, Plymouth, Handsworth (Staffs.), West Bromwich, Aston Manor, and Gateshead; from "fever" in Northampton; and from diarrhœa in Middlesbrough. The mortality from scarlet fever showed no marked excess in any of the large towns. One death from small-pox was registered last week in Bristol, but not one in any of the other 76 large towns; and no cases of this disease were under treatment last week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 3066, against 3446, 3299, and 3062 at the end of the three preceding weeks; 328 new cases were admitted during the week, against 295, 291, and 257 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 426, 454, and 369 in the three preceding weeks, further declined last week to 299 and were 71 below the corrected average number in the corresponding periods of the four preceding years. The causes of 54, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Salford, Bradford, Leeds, Hull, Newcastle-on-Tyne, and 48 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Rochdale, Blackburn, Preston, Middlesbrough, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18·2, 19·8, and 17 8 per 1000 in the three preceding weeks, rose again to 18·2 per 1000 during the week ending Jan. 20th, but was 2·4 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·4 in Paisley and 13·9 in Leith to 18·7 in Glasgow and 22·8 in Dundee. The 624 deaths in these towns included 24 which were referred to measles, 19 to diarrhœa, five to diphtheria, three to scarlet fever, and two to whooping cough, but not any to small-pox or "fever." In all, 53 deaths resulted from these principal infectious diseases last week, against 65, 80, and 61 in the three preceding weeks. These 53 deaths were equal to an annual rate of 1·5 per 1000, which was 0·3 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 25, 33, and 28 in the three preceding weeks, further declined last week to 24, of which 19 occurred in Glasgow and three in Dundee. The deaths from diarrhœa, which had been 14, 20, and 16 in the three preceding weeks, rose again to 19 last week, and included eight in Dundee, five in Glasgow, four in Aberdeen, and two in Edinburgh. The fatal cases of diphtheria, which had been 12, 13, and eight in the three preceding weeks, further declined last week to five, of which two were registered in Perth. The deaths from scarlet fever, which had been two in each of the two preceding weeks, increased last week to three, all of which occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 99, 136, and 126 in the three preceding weeks, further declined last week to 114, and were 42 below the number in the corresponding period of last year. The causes of 21, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·7 per 1000 in each of the two preceding weeks, declined to

20·1 per 1000 during the week ending Jan. 20th. During the past four weeks the death-rate has averaged 20·4 per 1000, the rates during the same period being 17·6 in London and 17·2 in Edinburgh. The 146 deaths of persons belonging to Dublin registered during the week under notice were 12 below the number in the preceding week and included three which were referred to the principal infectious diseases, against seven, six, and seven in the three preceding weeks; of these, one resulted from scarlet fever, one from whooping-cough, and one from diarrhœa, but not any from small-pox, measles, diphtheria, or "fever." These three deaths were equal to an annual rate of 0·4 per 1000, the death-rates last week from the principal infectious diseases being 1·2 in London and 0·6 in Edinburgh. The 146 deaths in Dublin last week included 28 of children under one year of age and 38 of persons aged 60 years and upwards; the deaths of infants showed a slight decline, while those of elderly persons exceeded the number in the preceding week. Five inquest cases and six deaths from violence were recorded, and 54, or more than a third, of the deaths occurred in public institutions. The causes of six, or more than 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

VARICOCELE AND CANDIDATES FOR THE ARMY.

We understand that the discussion with regard to varicocele as a disqualification for army candidates which has recently taken place in THE LANCET and the service newspapers has had the effect of inducing the authorities to modify the rules which have hitherto been in force. The text of the new regulations has not yet been published, but there is every reason to believe that the proposed alterations will lead to the acceptance by the Army Medical Board of many candidates who would have been disqualified under the old rules.

ROYAL NAVY MEDICAL SERVICE.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon Everard Home Saunders has been placed on the Retired List at his own request, with permission to assume the rank of Retired Deputy Inspector-General of Hospitals and Fleets (dated Jan. 16th, 1906).

The following appointments are notified:—Staff Surgeons: G. A. S. Bell to the *Monmouth* and H. Spicer to the *Cornwall*. Surgeons: A. C. W. Newport to the *Gladiator* and H. B. German to the *Argyll*.

COLDSTREAM GUARDS.

Surgeon-Lieutenant-Colonel Warren R. Crooke-Lawless is seconded for service on the Staff of the Viceroy and Governor-General of India (dated Nov. 2nd, 1905).

ROYAL ARMY MEDICAL CORPS.

Colonel Jules I. Routh is placed on temporary half-pay on account of ill-health (dated Jan. 8th, 1906). Lieutenant-Colonel Robert H. Forman to be Colonel, vice J. I. Routh (dated Jan. 8th, 1906). Major John H. Rivers, from the Seconded List, to be Major (dated Jan. 17th, 1906). Captain Hamilton G. F. Stallard, from the Seconded List, to be Captain (dated Jan. 7th, 1906).

Lieutenant-Colonel C. W. Johnson joins at Woolwich. Captain H. G. F. Stallard, attached to the Egyptian Army, is posted to the Eastern Command for duty at Woolwich. Major C. H. Melville, Sanitary Officer, Army Headquarters, India, is appointed an Expert in Sanitation on the Advisory Board.

Lieutenant-Colonel Alfred Peterkin is granted the local rank of Colonel while serving in Mauritius (dated Nov. 22nd, 1905). Lieutenant-Colonel George D. Hunter, D.S.O., is granted the local rank of Colonel whilst employed with the Egyptian Army (dated Jan. 24th, 1906).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain John M. Moir to be Surgeon-Major (dated Jan. 13th, 1906).

ROYAL ARMY MEDICAL CORPS (MILITIA).

Denis Murphy to be Lieutenant (dated Jan. 24th, 1906).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Midlothian: The undermentioned officers resign their commissions: Surgeon-Captain A. A. S. Skirving, C.M.G. (dated Jan. 24th, 1906); Surgeon-Captain (Honorary Lieutenant in the Army) W. M. Taylor (dated Jan. 24th, 1906).

Rifle: 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment: Supernumerary Surgeon-Captain F. E. A. Webb is absorbed into the Establishment (dated Nov. 1st, 1905). 2nd Volunteer Battalion the East Yorkshire Regiment: Surgeon-Captain (Major, Volunteers, retired) J. Chestnutt is granted the honorary rank of Surgeon-Major (dated Jan. 24th, 1906). 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry: Supernumerary Surgeon-Major Q. Chalmers (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Highland Light Infantry Volunteer Infantry Brigade) to be Surgeon-Lieutenant-Colonel, remaining Supernumerary (dated Jan. 24th, 1906). 4th (Stirlingshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Peter McFadyen to be Surgeon-Lieutenant (dated Jan. 24th, 1906).

DEATHS IN THE SERVICES.

Deputy Inspector-General Walter Frederick Cope Bartlett on Jan. 14th at Plymouth. He entered the service as surgeon in 1856 and was promoted to fleet surgeon in December, 1877, retiring in June, 1887, with the rank of deputy inspector-general of hospitals and fleets. He was assistant surgeon of the *Raleigh* when she was wrecked off the China coast in April, 1857. He afterwards served in the hospital ship at Hong-Kong during the China war, 1857–60 (medal), and was fleet surgeon of the *Agincourt* during the Egyptian war in 1882 (medal and Khedive's bronze star).

APOTHECARIES IN THE GERMAN ARMY.

The pharmaceutical department of the German army was reorganised in 1902. In Germany medical and pharmaceutical students are allowed to perform the military duty which is incumbent upon all able-bodied adolescents of the male sex by volunteering for one year, but before they can claim this privilege they have to produce a certificate of aptitude for military service from a board appointed by the State and must also undertake to equip, to clothe, and to maintain themselves at their own expense. Military apothecaries on the permanent list are recruited from these volunteers. When the new organisation came into force they were 49 in number, all classed as officers, although their relative rank was not defined, but when the new scheme is completed their strength will be considerably increased. The official title of the chief of the department is Oberstabsapotheker. He is attached to the medical section of the War Office, where he deals with the technical questions appertaining to his specialty and also controls all military pharmacies whether they belong to the active army or to the reserve. Next in rank are the Korpsstabsapotheker, 24 in number. One of these officers is attached to each of the 23 army corps into which the German army is divided. Under the orders of the principal medical officer he is responsible for the efficiency and good order of everything connected with his department, his duties including the bi-annual inspection of every pharmacy in the command, the control of supply and expenditure in these establishments, the auditing of their accounts, the superintendence of subordinates not only with the colours but also in the reserve, and the direction of the analytical laboratory with which every army corps is provided. The officers of the third grade are designated Stabsapotheker, and in 1902 they too were 24 in number. The duties of a Stabsapotheker consist in superintending the sanitary depôt of the army corps to which he belongs and in managing the pharmacy of the garrison hospital at headquarters. According to the reorganisation decree of 1902 every military hospital with 71 beds and upwards should have a Stabsapotheker in charge of its pharmacy, but this part of the scheme has not as yet been carried out. The pharmaceutical students serving for a year as volunteers are distributed according to requirements among 120 hospitals to the number of 265, some of them doing additional duty in the laboratories and sanitary depôts. There are also five more serving in the Kaiser Wilhelm Academy at Berlin under a Korpsstabsapotheker, which brings the total strength up to 270. After serving for six months a volunteer student may be permitted to return to his home in order that he may complete his professional education and obtain a diploma. He then has to resume military duty for a second period of six months and, should he be desirous of joining the permanent branch, must next go through a special course of six

weeks' duration to the satisfaction of the principal medical officer. Having surmounted this test the student has then to go through a course of analytical chemistry, with special reference to water and alimentary substances, in a Government laboratory. The duration of this course is 18 months and at the end of it the candidate has to satisfy a board of examiners. Ability to carry out analyses was rendered obligatory in 1902 for all the apothecaries who were then serving and all desirous of remaining in the department were obliged to provide themselves with the State diploma. The relief of military medical officers from more or less uncongenial work in the superintendence of pharmacies is a distinct step in advance but as yet the reform is incomplete. In all hospitals of less than 71 beds the medical officer is supplied with a limited stock of simple medicaments of which he has to control the distribution. Should more complicated medicine be required he must have recourse to the civilian pharmacy of the locality. The fact that the total strength of the pharmaceutical department of the German army in 1894 was only 217 of all ranks, whereas in 1904 it was 321, is of good augury that in time all military medical officers will be relieved from pharmaceutical duty. The details given above are taken for the most part from an article by Apothecary-Major of the First Class Kopp in the *Archives de Médecine et de Pharmacie Militaires* for December, 1905.

SELF-CONSTITUTED JUDGES.

It is reported in the *Syn Otetchestvo* that a marine of the warship *Georgia Pobiedonotza*, named Machotin, who was under observation in the Cronstadt hospital as a patient presumed to be insane, has been ordered before a court by the medical specialists in attendance with the observation that "he is a sly malingerer meriting sentence of death." No doubt, adds the journal quoted, this extraordinary assumption of juridical prerogative will be inquired into. It is an inversion of what usually occurs, for as a rule it is the intervention of the medical man which prevents a sick man from being treated as a responsible criminal.

MILITARY HYGIENE ON ACTIVE SERVICE.

At the Royal United Service Institution on Jan. 18th Surgeon-General A. Keogh, C.B., M.D. R.U.I., Director-General A.M.S., presided at the lecture given by Major T. H. J. C. Goodwin, D.S.O., R.A.M.C., on Military Hygiene on Active Service. Several officers took part in the interesting discussion which followed.

Correspondence.

"Audi alteram partem."

PHYSIOLOGICAL TESTS FOR PHARMACEUTICAL PREPARATIONS.

To the Editors of THE LANCET.

SIRS,—As my name has been quoted in the letters which have appeared on physiological tests for drugs may I briefly state the conclusions to which I have been led. We know that plants vary considerably in the amount of the active constituents which they contain; season, soil, climatic conditions, &c., all tend to modify the percentage of toxic principle. The British Pharmacopœia fully recognises this fact and has determined that, as far as possible, all potent galenicals shall be made to contain a definite amount of active substance—that is, they must conform to a chemical standard. It is not possible to determine the amount of active principle in certain drugs by chemical means, because their chemistry is too ill-defined; such drugs are those of the digitalis group, ergot, Indian hemp, and a few others. Moreover, it is just these drugs which exhibit the widest variations in physiological activity and hence the introduction of bio-chemical tests, which form an accurate means of determining the amount of active principle present. Dr. Haynes and myself have clearly shown that the activity of the drugs mentioned varies within the widest ranges. To take a single example, that of ergot, which is quoted by your correspondent, Dr. William Martin. We have shown, though we have not yet published, that the preparations of this drug, as sold by the leading wholesale houses, vary enormously in potency; and further, that preparations which we have ourselves made from different samples of the crude ergot show the same variability. It must be a matter of general regret that such important drugs as those named should be so variable in action; and the importance of putting into the hands of the physician a remedy which will produce the effects it is reputed to have, cannot be over-estimated. Yet the fact remains that much of the ergot at present sold is useless. We hope at an early date to put the case of ergot more clearly before the profession.

I am, Sirs, yours faithfully,
W. E. DIXON.

Pharmacological Laboratory, Cambridge, Jan. 23rd, 1906.

To the Editors of THE LANCET.

SIRS,—In the letter from Dr. W. Martin in your issue of Jan. 20th, I note that your correspondent suggests that too much emphasis is being laid on the physiological testing of drugs and that he disagrees with the suggestion that a central laboratory should be established for such testing. He gives as his reasons: (1) That it has not been proved that bio-chemical methods are of vital importance; and (2) that it has yet to be proved that if they are of vital importance private enterprise and effort are unable to deal with them.

With regard to the first point, I may refer your correspondent to the opinion of Dr. Barger and Dr. W. Vernon Shaw who, in the course of an exhaustive paper on the Chemical and Physiological Assay of Digitalis Tinctures, submitted to the British Pharmaceutical Conference at Sheffield and reported in the "Year Book of Pharmacy, 1904," p. 541, made the following statement as the result of their work: "As yet the only reliable method for the assay of digitalis tincture is the physiological one." Dr. Dixon Mann in the course of last year is reported to have stated that "few medicinal preparations vary so much in activity as do those of digitalis. It is not to be denied that much of the ordinary tincture of digitalis is inert or thereabouts." I think these statements, which could be easily multiplied tenfold, should suffice to cause any conscientious chemist to recognise the importance of standardising such preparations by physiological means.

With regard to the second point, it is practically impossible, at least in this country, for private enterprise and effort to deal with such matters. The testing could only be performed by licensed vivisectors, and it is essential that it should be performed under proper supervision in public laboratories.—I am, Sirs, yours faithfully,

Exeter, Jan. 22nd, 1906. H. WIPPELL GADD.

WHY DO ANIMALS CRY IN PAIN?

To the Editors of THE LANCET.

SIRS,—Assuming it is entirely beyond question that the use of communication can be regarded only as a secondary function of the cry of pain I propose to come at once to close quarters with the problem of the primary function of the cry by putting the following question. Has the cry animals utter in consequence of shock (in the form of pain, surprise, fright, &c.) any psychological value because of the sensory stimuli which, so to speak, double back upon the animal's own motor, coördinating, and psychical nerve centres, from the muscular movement of the vocal apparatus and from the sounds of the cry?

A first step toward answering this question will be to note the deep-rooted prerogatives which sounds, especially vocal sounds, possess for the stimulation of motor and psychical nerve centres. We may pass by the unique stimulating power of the spoken word because it is intimately bound up with the uses of communication and is exclusively human, and take the sounds of music. Here, at once, human experience and the behaviour of birds under the influence of the music of their family or tribe leave no doubt about the special stimulating power of vocal sounds, whether in musical forms or in the character of broken cries, over motor and psychical functioning. Now the results of zoological research into the genesis of the organs of hearing, in supporting other indications of the prerogatives of vocal sounds over motor and psychical functioning, also, at the same time, distinctly warn us away from the supposition that these prerogatives are a mere consequence of the use of the voice for communication. It is shown that in their rudimentary forms organs of audition

in insects (halteres, chordotonal organs) are largely concerned in motor or coördinating or balancing functions, and that they "are analogous to the semicircular canals of vertebrates in their functions."[1]

Let us pass on to ask and try to realise what their subjection to the depressing effects of shock (when animals most universally cry out) upon the motor and coördinating functions has meant to animals and the precarious position in which it has placed them in regard to the business of active life-preservation. With the exception of cases where the suppression of these functions through shock gave certain helpless animals a cryptic advantage or gave their enemy a repugnant impression of dead food, the evil of the briefest loss or even impairment of motor and coördinating functions would be as great as death itself. And that much of the stress of life-preservation has been from the remotest stages of animal development thrown upon the power of animal organisms to react rapidly against shock is amply illustrated in the phenomena of expressions of excitement. But the most remarkable point to observe from the standpoint of our problem is that animals generally react against shock by way of the increase and accentuation of life-processes *in the order of their importance in the sustenance of motor, coördinating, and psychical functioning*, the organs of circulation and respiration reacting first, and most emphatically of all, among the viscera. But besides the increase and accentuation of life-processes upon which motor and psychical functions depend in normal conditions, we find animal organisms setting into motion certain nervous and muscular machinery which in normal conditions, apart from shock or excitement, is more or less quiescent. Among this nervous and muscular machinery I trace the vocal and all other sound-producing apparatus of animals.

No one who looks closely into the genesis and comparative anatomy of the organs of sound-production in animals can fail to be impressed with the eagerness, so to speak, with which animals have seized upon any physiological means of developing a sound-producing instrument. Wonderful as are the advantages which the land vertebrates have taken of the opportunities of sound-production presented by their breathing pipe, perhaps some of the invertebrates display still greater wonders in the way they seized on any opportunity of rubbing the hard integuments of wing cases or wings against each other or against the femur for sound-production.

What is the combined significance of these various points? 1. The prerogatives of the organ of audition over motor and psychical functioning. 2. The eagerness of animal organisms to adopt and develop any available means of producing stimuli to influence the organ of audition. 3. The fact that the most universal occasion upon which animals use their sounding instruments is on occasion when their motor and psychical functioning is threatened with suppression by shock.

What is the significance of the further fact that the power of action in the vocal machinery abides with the animal when the higher powers of volition and consciousness are lapsed (as under the action of chloroform), or as shown by experiment after the removal of the cerebral hemispheres? Why does the power to cry out abide so strangely with the animal along with the still available centres for equilibration, coördinated movement, and adaptive reaction? I conclude it is because the primary function of the cry attered in connexion with pain or any shock or excitement, the function for which organs of sound-production were developed, is to convey stimuli to the shocked motor and coördinating nerve centres of the crying animal.

I am, Sirs, yours faithfully,

Streatham-hill, S.W., Jan. 13th, 1906. J. DONOVAN.

MODERN MEDICAL EDUCATION.

To the Editors of THE LANCET.

SIRS,—I cannot congratulate either "L.S.A." or "A. F. H." upon their degree of comprehension of the great subject of modern medical education and the latter overstates his case when he says that the medical treatment of disease is not taught in the curriculum at all. They, however, represent a considerable number of medical men in their attempt to belittle the importance of the preliminary subjects (which in most of the pass examinations are elementary enough in all conscience) and for no other reason than because they do not appear to be of direct commercial value to a man the moment he has "qualified." They appear to forget that the knowledge of these very scientific subjects is the one safeguard against quackery and dangerous experimentation, or against delusive and seductive theories by which the unscientifically trained are readily deceived. They would do away with the bed-rock upon which the student must build all his subsequently to be acquired clinical knowledge during perhaps the next 40 years of his life. In most cases it is his one opportunity for learning pure science and acquiring a scientific habit of thought before he is launched on the endless distractions and exactions of practice and the rest. They would detract from this valuable discipline in order to give more time for picking up some wrinkles from the dispenser. Is it not rather a question of obeying the dictum, "These ought ye to have done and not to leave the other undone," for ye have need of both? Time is an element in education which cannot be ignored and short cuts to efficiency are not to be trusted.

There are too many medical men of the prescribing chemist variety already, but what we really want is a smaller number of better men who have not been rushed through a course of training but who by a present sacrifice have insured a greater future efficiency. Of course, a good deal depends on the personal factor and those who have a vocation for medicine will not be so slow or so stupid at picking up practical points in every-day practice as "A. F. H." seems to suppose. Lastly, is it not strange, in an age when commerce is looking increasingly to both pure and applied science for both light and profit, to find members of a learned profession asking that their sons should neglect the foundations of preliminary science in order that they may the more quickly earn money by acquiring the habits of the prescribing chemist?

I am, Sirs, yours faithfully,

Old Burlington-street, W., Jan. 20th, 1906. A. W. FULLER.

SANATORIUM TREATMENT FOR TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—I am glad to see that Dr. Arthur Latham has corrected some of his conclusions on the statistics of consumption among the upper classes published by Dr. C. J. B. Williams and myself. The quotation he gives from my father's Lumleian lectures in 1862 alludes to some of the cases which at a later date were included in the 1000 cases published in 1870 in the Transactions of the Royal Medical and Chirurgical Society and in "Pulmonary Consumption," but a vigorous search and much correspondence revealed the existence and well-being of a number of patients who had before passed out of sight and thus the results became more favourable than at first appeared. The cases, it is true, were selected but the grounds of their selection are fully given in our book[1] and were based more on the desirability of acquiring information of their further progress than on the intention of obtaining favourable results. A physician sees a large number of patients once, or possibly twice, and after a few months has lost sight of them altogether. What use are such cases for statistical purposes? Unless some such selection is adopted statistics of the upper classes are impossible. Dr. Latham's complaint that he did not find either in my book or my letter the information how long the "well" patients had been capable of following their occupations after treatment had ceased exemplifies the difficulty of settling questions by statistics when the classes of patients compared are quite different. Many of our patients were of the leisured class and had no profession, their occupation being more or less one of amusement. 375 were women, a great proportion of whom had no occupation but home duties. How can one adopt as a criterion in the case of these "capacity for full work"!

As the statistics were drawn up to demonstrate the length of life among consumptives of the upper classes the deaths were separated from the living and the duration of life in each class was calculated, but even by Dr. Latham's method of including the deaths the "well" and "tolerably well" reach a percentage of 57·8, which is rather higher than that of the German sanatoriums (31 per cent. to 53 per cent.) as stated by him. Dr. Latham says my "statistics are not

[1] Lowne: The Anatomy of the Blow Fly, part v., p. 613. See also Professor Gaskell, Journal of Anatomy and Physiology, part ii., January, 1902, p. 183.

[1] Pulmonary Consumption, second edition, p. 313.

drawn up on the rigid lines of the German companies." This may be so but they were judged fit to be admitted into the Transactions of the Royal Medical and Chirurgical Society and were highly approved of by the famous medical statistician, Dr. Guy, F.R.S., who, I believe, communicated them to the Royal Statistical Society. If Dr. Latham had kindly discussed the statistics with me before quoting them, as the late Dr. Wilson Fox often did, I would gladly have tried to make matters clearer to him.

I am, Sirs, yours faithfully,

Jan. 22nd, 1906. C. THEODORE WILLIAMS.

TO MEDICAL FREEMASONS.

To the Editors of THE LANCET.

SIRS,—May I once again through the medium of your widely read columns appeal to medical men, and more especially to medical Freemasons who are subscribers to the different Masonic charitable institutions, for their votes and influence on behalf of the candidates whose names are given below and who are up for election in April? As there is only one medical candidate for each institution their success should be assured. Votes will be gratefully received by our treasurer, Dr. J. Eyre, 19, Wandle-road, S.W., or by myself.

Royal Masonic Institution for Girls (election on April 21st).—Mabel Florence Mackinnon, daughter of the late Lieutenant-Colonel H. W. A. Mackinnon, D.S.O., R.A.M.C., M.R.C.S. Eng., L.S.A.

Royal Masonic Institution for Boys (election on April 20th).—Henry Percy Mackinnon, brother of the other candidate.

I am, Sirs, yours faithfully,

HAROLD S. SINGTON,
Secretary, St. Luke's Medical Lodge of Instruction.

44, St. Mary's Mansions, W., Jan. 22nd, 1906.

A CASE OF CLAY-COLOURED STOOLS WITHOUT JAUNDICE BUT ATTENDED WITH COPIOUS BILIOUS VOMIT.

To the Editors of THE LANCET.

SIRS,—With all respect to Dr. P. J. Cammidge, there is only one point under discussion—viz., whether or not "the characteristic white stools often seen in pancreatic disease in the absence of jaundice owe their pale colour entirely to the solidification of the fat when the motion cools, although there may be a normal amount of bile entering the intestines." Around that point all this correspondence has arisen. However, as Dr. Cammidge has now referred to my case, I at once admit that the evidence he has adduced makes necessary a modification of the passage he has quoted, and I willingly insert the words "or deficient in" after the words "may be absent from." But that makes no difference to my objection to the above statement—an objection which, as I have pointed out, does not arise merely out of my case.

To return to the point. I have carefully read Dr Cammidge's paper to which he has referred me. It is a very interesting paper but it does not contain any proof that the stools in question contain the *normal amount* of stercobilin. Here is the passage dealing with pigment: "In all the cases of simple pancreatitis and obstruction, even those with absolutely white stools, stercobilin has been found. Occasionally only traces have been met with, but usually a well-marked reaction has been obtained. Of 13 cases diagnosed as malignant disease of the pancreas ten showed no stercobilin, even when a considerable quantity of the fæces were submitted to examination, and three gave only a slight reaction." It was not stated what was the colour of the motions in the cases where the well-marked reaction was obtained. It must also be remembered that the material tested for stercobilin was not an entire sample of motion but only the residue left after treatment with ether. Ten of the cases diagnosed as cancer were not verified by a post mortem examination and it is not stated whether jaundice was present in these or absent.

Dr. Cammidge mistakes my contention with regard to residue. I asked, not if the motions were bulky, but if they were eight and a half times bulkier than normal in one particular case. To this he does not reply. The cases of "acholia" to which I drew attention have a clear bearing on the discussion and Dr. Cammidge cannot complain of my discussing some cases of acholia not due to pancreatic disease since he himself introduced these into the discussion. I have thrown no doubt on Dr. Cammidge's work. His reputation stands high and I have every respect for his observations; but I differ from his conclusions. He has not referred to Sir Lauder Brunton's case to which I drew attention. In short, Dr. Cammidge and I are wasting our time and the space of THE LANCET in discussing a statement which has no evidence to support it.

I am, Sirs, yours faithfully,

Jan. 22nd, 1906. W. GORDON.

THE EPILEPTIC PATIENT AND THE LUNACY LAWS.

To the Editors of THE LANCET.

SIRS,—May I draw attention to another aspect of the lunacy law? Owners of nursing homes are liable to fines for receiving a mental patient not under certificates but no penalty is inflicted on the person who knowingly places such a patient in a home without stating the nature of the case or on the medical man who advises that such a case is not certifiable. When the lunacy laws are once again amended it is to be hoped that some protection will be afforded to those who are thus unwittingly made to break the law; in the meantime they will be wise to seek promptly the advice and assistance of the Commissioners whenever such emergencies arise.

I am, Sirs, yours faithfully,

Jan. 20th, 1906. EXPERIENTIA DOCET.

ASYLUM NURSES' DISPUTE.

To the Editors of THE LANCET.

SIRS,—Regarding the above dispute at Gartloch Asylum your local correspondent remarks that "at a recent meeting of the parish council it was pointed out that the increase in the nursing hours was largely due to the action of the Commissioner in Lunacy who recently expressed the opinion that the asylums at Gartloch and Woodilee were the most expensively conducted institutions of the kind in Scotland." May I be permitted to point out that the affairs of Gartloch and Woodilee asylums are discussed at the meetings of the Glasgow District Lunacy Board and that the parish council has no jurisdiction over these asylums? Secondly, the Commissioner in Lunacy gave no expression of opinion such as has been stated. Thirdly, were the opinion expressed that the asylums at Gartloch and Woodilee were the most expensively conducted institutions of the kind in Scotland it would be absolutely untrue, as anyone can easily ascertain by reference to the Blue-books issued by the General Board of Lunacy for Scotland. I trust you will give the same prominence to this refutation as you have given to the paragraph questioned.—I am, Sirs, yours faithfully,

Jan. 20th, 1906. M.D.

LOW MORTALITY AMONG INFANTS IN IRELAND.

To the Editors of THE LANCET.

SIRS,—In commenting on the annual report for 1904 of the Registrar-General for Ireland you say: "It would be interesting to know more concerning the causes responsible for the low mortality among infants in Ireland." When in Dublin this summer I was struck by the contrast between the slum children of Dublin and those of Edinburgh. The legs and ankles of the Dublin children were a delight to the eye and the rest of the figure was as a rule in harmony with their good development. A child bearing the impress of rickets was a sight comparatively rare, nor did this disease appear at all frequently in dispensary work as compared with my Edinburgh experience. The adenoid facies again was remarkable by its absence. The bones of the face were well formed and symmetrically developed both in the children and in the women as a rule. They were well covered with flesh, which in turn generally bore a healthy skin. One further observed in midwifery work that it was the rule for the women to suckle their children and when, to observe the effects, one suggested bottle-feeding the suggestion seemed to be received as bordering on an insult to the mother. The frequency of abortion was remarkable but so also was the routine practice of radical treatment followed by the rapid return to health of the patient. As a rule, I was told, the ensuing pregnancy was healthy.

The housing of the working class is better in Dublin than in Edinburgh, the Iveagh buildings being particularly good.

The streets are broader and the houses less high. Large quantities of porter are drunk which suggests a question as to possible relation of this to the ability to suckle children. The whisky was not of the fiery order but was conspicuously advertised as malt. One sees hockey, football, &c., in full swing in the public parks about Dublin on Sunday. I have been induced to state these observations by reading your comment. I had supposed they were matters of common knowledge. I do not attempt any deductions but these observations suggest that inquiry might be fruitful. In conclusion, if the conditions of life in Dublin favour low infantile mortality, why is the death-rate from tuberculosis so high?

I am, Sirs, yours faithfully,

Jan. 16th, 1906. INQUIRER.

TUBERCULOSIS AND THE NORTHAMPTON BOOT TRADE: A PROPOSED SANATORIUM.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(*Concluded from p. 188.*)

THE proposal that the town of Northampton should build a popular sanatorium was adopted at a moment when unfortunately several town councillors were absent. Consequently it has been regarded as of the nature of a snatch vote and the council has to some extent gone back upon its decision. Indeed, it is easy to see that the whole question is viewed with considerable apprehension. A great meeting was held at Northampton on Nov. 1st, when Councillor J. Manfield, J.P., a candidate for the Mayoralty, delivered a lengthy speech practically in opposition to the resolution adopted by the town council on Sept. 5th in favour of the erection of a sanatorium. He recognised that corporations had the right to take steps for the prevention of tuberculosis but was in doubt as to what were the best steps. He declared that attempts to deal with this matter by public bodies were in an experimental stage. To this it might be answered that every year some 30,000 patients are received in the sanatoriums created by the German authorities and that this constituted something more than an experiment. Also, it might further be urged that if experiments have to be made surely it is those towns where the disease is exceptionally prevalent that have the more reason to make the first experiments. Against this latter argument it may, however, be objected that it is specially the workers in the boot trade and not the inhabitants of the town as a whole who are disproportionately afflicted with tuberculosis. It might be suggested that before the town as a whole is burdened with the expense of building a sanatorium the owners of the boot factories should be compelled to incur the expense of ventilating their factories properly. The Public Health Act of 1878, as improved by the Act of 1891, places such workshops and factories under the care of the local authority. If the local authority fails to act in this respect the Secretary of State may authorise the factory inspector to take whatever action is necessary and to charge the same to the local sanitary authority. Section 32 stipulates for the maintenance of a reasonable temperature in each workroom and it is not reasonable to expect a worker to sit or stand all day long in the draught caused by an open window. On the other hand, the Act insists on sufficient ventilation and air space. It is impossible to repeat too often that this can only be obtained by mechanical means scientifically applied. The air inlets must be arranged over such an extended surface that the air shall not travel at a greater velocity than about one foot per second. There would, then, be no further complaints as to draughts.

In the meanwhile and before perfect hygiene and ventilation are established in all the factories and workshops many thousand cases of pulmonary tuberculosis will occur for which provision should be made. If in some distant future there is a good time coming when all poverty and insanitary conditions having been abolished there shall be no more tuberculosis, sanatoriums will still be of use as ordinary convalescent homes, or schools, or holiday resorts for children, and many other purposes. Therefore, the hope that in regard to tuberculosis they may ultimately become useless need not retard their immediate construction.

To return to Councillor Manfield and the Northampton corporation, considerable capital is made of the argument that it is more useful to treat advanced cases than those cases which, taken at the earliest stages, offer some hope of cure. The idea, of course, is that the advanced cases spread the disease and that contagion would be prevented if they could be removed from their homes and isolated. But it would be much more satisfactory if it were possible to believe that this argument was purely a scientific argument and was in no wise connected with financial considerations. Councillor Manfield, however, very frankly not only admitted, but even urged as an inducement, that a building for advanced cases might be obtained without great cost just outside the town. Here "simple, plain, comfortable accommodation would be all that would be required," and he had previously insisted that "no elaborate sanatorium would be required for this purpose." While thus betraying how deeply he was actuated by financial considerations, the speaker seemed to forget that the patients themselves would be influenced by quite different feelings. As it is not proposed to employ compulsion, such feelings are of practical importance. Now it is quite obvious that a person still actuated by the buoyant hopefulness of youth would gladly leave his friends and go to an "elaborate sanatorium" so as to free himself from the menace of a fatal disease. It is not so certain that a patient in the last stages of a disease which had become incurable would as willingly leave his relatives and friends and go to die in a "simple, plain" hospital for the hopeless. Has it occurred to the advocates of this system to consider for a moment the feelings of those persons who are to be removed to this house for the dying? It is strange to have to recommend the corporation of so advanced a town as Northampton to look for an example on this phase of the question to, for instance, the Danubian principalities. At Bucharest a large sanatorium has been built where in separate buildings and on a vast estate tuberculosis in all its stages is treated. Here care is taken that there shall be nothing to show the patient that his case is considered hopeless. Yet the Roumanians, who have only of recent years become an independent nation, are not wealthy like the inhabitants of Northampton. Nor are they placed in the vanguard of civilisation—a position which British subjects often boast of occupying.

On Dec. 4th last the question came up for discussion once more and the sanitary committee reported to the town council that the purchase of a site and the erection of a sanatorium to hold 40 beds would cost about £14,000. This is £350 per bed, or something like £100 to £150 in excess of the more general estimates. For instance, the very elaborate Basle popular sanatorium at Davos-Platz, where the building materials had to be carried up to a height of over 5000 feet above the sea, cost £263 per bed, and the much more simple Dutch sanatorium, also at Davos-Platz, only cost £150 per bed. The estimate for the yearly outlay seems much more reasonable—namely, £3200, or £80 per annum per bed. Apprehending that a sanatorium would cost too much, the sanitary committee recommended that selected cases should be sent to other sanatoriums already established in the country. The difficulty rests, however, in this very fact that there are hardly any popular sanatoriums in England. If there had been a plentiful supply of such institutions we should not have had the Sandgate scandal. At the Paris International Congress on Tuberculosis the medical officer of health of Brighton, Dr. A. Newsholme, stated that in the London hospitals devoted especially to the treatment of lung diseases there were only 655 beds; in the provinces there were 414 beds, in Scotland 41, and in Ireland 64 beds. As more than 56,000 persons die from pulmonary tuberculosis in Great Britain during the course of the year, neither the hospitals nor the sanatoriums that exist are anything like sufficient to provide the accommodation needed. Therefore Dr. Newsholme had to explain that in England the only action in regard to the removal from their homes and the treatment of cases of pulmonary tuberculosis which had been taken on a sufficiently extensive scale materially to reduce the prevalence of that disease was the reception, and incidentally the isolation, of tuberculous paupers in the workhouse infirmaries. Practically little or nothing else is done in regard to treatment and isolation of cases of pulmonary tuberculosis.

The reduction, amounting to some 50 per cent., in the prevalence of tuberculosis which to our great honour has been realised in this country is the reward of general

sanitary and economic improvements and not of any special measures for the treatment of that disease. Indeed, it is in view of this magnificent result that in criticising the position at Northampton the first care taken was to point out that further sanitary improvements were needed in the trade where an exceptionally large number of cases occurred. If the corporation is so very anxious to avoid spending money, then by far the cheapest way to reduce the prevalence of tuberculosis is to compel the boot manufacturers to warm and to ventilate properly their factories and workshops.

The sanitary committee, having pointed out that it would be very expensive to build a sanatorium, proposed that the Walford-road Borough Hospital, which used to be employed for isolation purposes, should be opened for the reception of ten advanced cases. But Dr. Beatty, the medical officer of health, has pointed out that the number of deaths from pulmonary tuberculosis registered at Northampton in 1904 amounted to 104 and in 1903 to 114. To this Dr. Beatty adds: "The proportion of living consumptives in any one year to those who die in the same period is between three and four to one, therefore in the town during the year 1904 there must have been about 360 cases, and of these 71, or less than 20 per cent., were notified." According to these figures, therefore, it is not ten but about 100 patients who should be removed to a hospital if they have not sufficient house room to isolate themselves in their own homes. As it is the workers in the boot and shoe trade who are the principal victims it is quite obvious that the great majority are not able to isolate themselves properly. Therefore the provision of ten beds for patients to die in is just about the very smallest little bit of tinkering with the subject that could possibly have been attempted.

Even the proposal to build a sanatorium for 40 beds which seems to have caused so great an alarm is altogether inadequate. It would be much cheaper to build a sanatorium for from 100 to 200 beds. The greater the number of beds the greater the extent of the surrounding estate, pine wood forests, &c., if the same sum per bed was spent on the purchase of land. The cost of administration and management is also cheaper per head the larger the number of persons concerned. The figures given show that Northampton itself could supply far more than 40 patients. But there is such a complete dearth of popular sanatoriums in this country that the town council of Northampton could easily obtain from other local authorities patients at a rate which would help to defray the expense incurred. For local authorities to send patients to some speculator who is making a trade of the outdoor treatment of tuberculosis is to incur a very serious responsibility. But it is most natural that the capital of a county should take the initiative and should offer to the surrounding smaller localities the use of a sanatorium built and managed under public control for the public good and not as a private speculation. Such an initiative would receive very wide support and the outlay would be more than recouped by the direct and indirect benefits that would accrue. If this suggestion seems too venturesome and bold there is nevertheless nothing novel or untried about it. For instance, it is now three years since the Députation Provinciale or County Council of Liége completed, at a cost of £52,000, its magnificent sanatorium among hills and forest at Borgoumont. Here there are 114 beds and it is a palatial structure situated at an altitude of 415 metres, with a façade of 146 metres, covering 3519 square metres, and with a cube contents or measurement of 28,800 cubic metres. The sun-bathed verandahs, the broad corridors within, the rooms, each with a wall all window space, the majestic valley that stretches out in front, the verdure of the surrounding mountains and forests, the ideal character of the site, the luxury of the building, the excellent results already obtained with the patients, are all things that have to be seen before the puny character of the proposals made to the Northampton town council can be adequately appreciated. Why should Northampton hesitate when Liége has led the way and with so much success? Nor need Northampton be alone in the matter. It would be better to act in consort with the entire county, for a sanatorium is more economical when built on a large scale. Also, an arrangement might be made with some of the friendly societies. It would be to their financial advantage to pay for the keep and treatment of some of their members in a sanatorium. But even if the cost of the maintenance of all the patients was paid for out of the rates that cost would be reduced if it came from the rates of more than one borough or locality. Then it must be borne in mind that whatever is done in this direction will tend first and foremost to reduce the sum total of human suffering; secondly, it will increase the labour capacity and therefore the wealth of the community; and, finally, it will bring about a reduction in the poor rates. Of course, it is obvious that the building of a sanatorium does not alone suffice. At least, four different sorts of institutions are needed. First, there should be a dispensary and investigation department combined. To this a large staff of voluntary workers should be attached. Their mission would be to find out where the sanitary laws which help to prevent tuberculosis are not applied and to get evidence against the delinquents. Then they should discover cases of tuberculosis and bring them to the dispensary where the medical officer would examine them and decide what was to be done. In this respect there should be at least three different methods available. First the preventive method, applicable especially to children, consisting of out-of-door schools and treatment, such as exist already at Berlin and many other towns, especially in Germany. Then, secondly, the curative out-of-door treatment for cases in the earliest stages, that is to say, the sanatorium proper. Thirdly, there should be the hospital treatment for the advanced and almost hopeless cases and the chief advantage secured here is the isolation of patients at the time when they are most likely to spread the disease. The special anti-tuberculosis dispensary serves then to discover and to sift the cases; to decide to which of the three great divisions in treatment they properly belong. It also serves as a centre from which the patients who have come back from the sanatorium can be watched and made to carry out strictly the instructions which they have received. This is a somewhat wider programme than the provision of ten beds in a disused hospital for infectious diseases; and this is what Northampton and other English towns will have to do if they wish to be on a level with Berlin and many other continental towns and cities.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE second term of the winter session commenced on Jan. 16th and all departments are again in full work. Unfortunately, the Principal, Sir Oliver Lodge, is absent. He was seized during the holidays with an attack of influenzal character which confined him to bed for a considerable time and when he became convalescent his medical advisers insisted that he must go to Italy for several weeks.—The anatomical department has lost Dr. W. Wright who has been appointed lecturer on anatomy at the Middlesex Hospital. Dr. Wright came to Birmingham about five years ago, being appointed from the junior demonstratorship of anatomy in the Owens College to the senior demonstratorship in Birmingham. During his tenure of office he made many friends who now regret his departure and are preparing to celebrate his advance to an independent post by a complimentary dinner to be given during the course of next month.—A long-felt want in Birmingham is about to be satisfied by the erection of a 300-ton testing machine in the engineering department in the new buildings at Bournebrook. The money for this great instrument was secured by the energy of Mr. Joseph Chamberlain, the Chancellor of the University, and the acquisition of the instrument will be greatly appreciated by the manufacturers in the neighbourhood.

Local Charities.

The will of the late Mr. Probin Ward provides for the division of £550 between the following 11 local charities, £50 to be given to each: The Birmingham General Hospital, the Queen's Hospital, the Orthopædic Hospital, the Eye Hospital, the Children's Hospital, the Ear and Throat Hospital, the Blue Coat School, the Institution for the Blind, the Institution for the Deaf and Dumb, the Women's Hospital, and the Birmingham Dispensary; and the late Mr. William Robert Lane has left £1000 each to the Birmingham General Hospital, the Queen's Hospital, and the Children's

Hospital.—An attempt has been made to start an agitation for bringing the hospitals under municipal control by a complaint, published in the correspondence columns of a local paper, that the nurses in one of the hospitals were overworked and by a suggestion that their working hours should be limited to eight. The writer urged that other reforms were also necessary but, as is usual with agitators, he overstated his case by asserting that at the present time the hours were 12½ and 11½ on alternate days, whilst the reply of the secretary of the hospital shows that the staff nurses work 10 hours, the assistant nurses 10 and 10½ hours, and the probationers 10 and 11 hours on alternate days.—The quarterly report of the Birmingham and Midland Eye Hospital demonstrates that the institution is doing a very large amount of useful work. The total number of patients under observation during the period was 6646, of which 261 were in-patients and 6385 were out-patients. Over 2000 out-patients and 73 in-patients were treated without tickets on account of their urgent need. During the quarter 329 operations were performed, 65 patients were provided with glass eyes, and 2480 with spectacles.

The City of Birmingham Aid Committee.

In the past it has been the custom in Birmingham, as in many other cities, that each of the local mutual aid societies should have its own organisation. Where centralisation occurred it was merely for the purpose of keeping the various organisations in touch with each other. It has now been decided to form a combination consisting of a central body of which the various mutual aid societies will form branches. The work in future will be carried out by a central executive committee, seven branch committees working in different sections of the city, and as many district helpers' committees as may be necessary for the proper working of each branch. The executive council will consist of the Lord Mayor, as president, if he is willing to serve; the chairman, the honorary secretaries and treasurers of the branch committees; two additional representatives from each branch committee; a representative from each of the Birmingham, Aston, and King's Norton boards of guardians; a representative of the distress committee under the Unemployed Workmen's Act, 1905; a representative of the Charity Organisation Society; a representative of the Women's Settlement; a representative of the Birmingham trades council; and other persons possessing special knowledge, coöpted from time to time by the council. The funds are to be raised by a finance committee consisting of the honorary treasurers of the branches and they will be controlled by the executive council. The step which has been taken is expected to be more than fully justified, for, as a result, the work will be better organised and controlled and subscribers to the funds will be able to feel certain that everything will be well managed. The scheme corresponds with the Elberfeld system in many respects but it is not quite so democratic.

Underfed Children.

Some misunderstanding and a little friction have arisen in the district in association with underfed children and the chairman of the Birmingham School Cheap Dinner Society, the Rev. E. F. M. McCarthy, has written to the Birmingham and Aston boards of guardians stating that the business committee of his society has decided to discontinue the supply of dinners for the present and, further, that his committee desires to point out to the guardians that the scheme they are working in conjunction with Mr. Hookham will leave a large number of underfed children without a meal. Some of the members of the Aston board were of opinion that the Act did not give them all the powers they desired, but both boards were convinced that they had done what they could. Up to the present the Birmingham board had only received 800 applications, whilst the education authorities estimated that 2600 children were underfed; but it was pointed out that some parents who were neglectful in the past have, under the threat of being sued for the necessary money, undertaken to feed their children. It would be very regrettable if the children suffered from misunderstandings between different organisations, but it is quite time that many parents should be forced to recognise their responsibilities.

Cottage Homes for Boys.

It appears, from a discussion which occurred at a recent meeting of the King's Norton board of guardians, that the system of cottage homes in the Birmingham district is proving a distinct success. Apparently the majority of the boys sent to the homes do well in after life, and the statement of the chairman of the cottage homes committee that although they drew their children largely from the gutter not more than 1 per cent. ever came back to the workhouse is very encouraging. The cost of cottage homes is slightly in excess of the boarding-out system but the results on the whole appear to justify the expense.

Lightwoods Park and Warley Woods.

The scheme for the acquisition of Lightwoods Park and Warley Woods is still progressing, though not perhaps so quickly as its promoters could desire. A sum of £70,000 is required and of this £28,000 are still to be obtained. The staff of the University has contributed over £51, and of the total sum hitherto secured £40,000 have been given by 500 people. The question of a contribution from Birmingham has received preliminary consideration by the general purposes committee and there seems to be a possibility that a substantial contribution may be recommended on the principle of securing as many public recreation grounds as possible in the immediate neighbourhood. It has been pointed out, however, that as the woods are outside Birmingham and immediately contiguous to Smethwick and Oldbury it would be well that those places should lead the way with larger contributions than they have hitherto promised.

Jan. 23rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday in Liverpool.

FINE weather favoured the thirty-sixth Hospital Sunday collection which took place in the Liverpool churches on Jan. 14th. It cannot be said that in previous years the elements had been propitious. "Hospital Sunday weather" was fast becoming a synonym for all that was most inclement and disagreeable. Despite this most auspicious circumstance the results are not calculated to give unqualified satisfaction. Whilst many churches have increased their collections the majority have fallen. The decline is most noticeable in the case of those places of worship which are attended by wealthy congregations. The two most striking instances are Sefton Park Presbyterian Church (where the collection showed a falling off of £90) and St. Nicholas's Church, Blundellsands (where there was a drop of £50). The decrease at the latter church is difficult to account for but the falling off at Sefton Park Presbyterian Church may very safely be attributed to the fact that the Rev. Dr. John Watson (Ian Maclaren) no longer occupies the pulpit there, and that no regular minister has yet been appointed. The first place is again accorded to Ullet-road Unitarian Church, where the receipts showed a considerable increase over last year—£610 as against £552.

The West Kirby Appeal Case.

In the Court of Appeal on Jan. 23rd, before Lords Justices Vaughan Williams and Stirling, the hearing of the appeal of Dr. A. Bicknell of West Kirby against a judgment in favour of the plaintiff Hobson entered at the trial at the Liverpool assizes in May last was concluded. It will be remembered that the jury found that the defendant was wrong and guilty of negligence in his original diagnosis of the disease from which the plaintiff was suffering but that he afterwards acted with all care, and they awarded the plaintiff £70 for loss of wages and "tips" at the Golf Club. Lord Justice Vaughan Williams, in giving judgment, said that the question which the court had to decide was whether the defendant was negligent in the diagnosis which he made when he was called in to treat the plaintiff; and, secondly, whether the result that followed—that was to say, the dismissal of the plaintiff from his employment at the club—was brought about or caused by such a negligent diagnosis. The jury found that the defendant was negligent inasmuch as he accepted the diagnosis of Dr. Moss (who first examined the plaintiff) without sufficient re-examination but that subsequently he used all reasonable care. There was, in his lordship's opinion, a manifest difficulty in reconciling this finding with the finding as to damages. If this was a mere question of a verdict against the weight of evidence he should not have been inclined to interfere but

the question was whether the damages followed from the negligence. It was clearly shown that the plaintiff was dismissed as the result of a subsequent re-examination and it therefore was only possible to support the finding as to damages on the assumption of negligence subsequent to the first diagnosis, but there was an express finding of the jury that the defendant subsequently used all reasonable care and that being so it could not be said that the damages followed from negligence. For those reasons there must be judgment for Dr. Bicknell, the defendant. Lord Justice Stirling concurred and the appeal was allowed and judgment entered for the defendant, with the general costs of the trial, the plaintiff to have the costs of the issue on which he succeeded. Dr. Bicknell is to be congratulated on the result of the appeal.

Insanitary Swearing-in: a Medical Officer of Health's Objection at the Birkenhead Police Court.

Dr. R. Sydney Marsden, the medical officer of health of Birkenhead, giving evidence at the Birkenhead police court on Jan. 19th in a "bad meat" case, objected to the dirty condition of the Bible which was offered to him for swearing-in purposes. He respectfully suggested that it was time the magistrates should order a new Bible to be provided. The book was not in a sanitary condition and witnesses should not be asked to kiss it. As medical officer of health he thought it his duty to call attention to it. The deputy town clerk facetiously remarked that Dr. Marsden had better serve a notice on the magistrate to abate the nuisance. On being asked if he wished to have the book condemned Dr. Marsden, holding it up between his finger and thumb, remarked that he certainly should like an order for its destruction. The chairman said the matter would be attended to.

Small-pox in Liverpool: Russian Emigrants Isolated.

At the weekly meeting of the health committee Dr. E. W. Hope (medical officer of health) reported that there were 758 cases in hospital, including two cases of small-pox—Russian emigrants *en route* to America and now in the port sanitary hospital.

Jan. 23rd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

School Influence in the Spread of Diphtheria.

AT the meeting of the West of England and South Wales branch of the Incorporated Society of Medical Officers of Health held at Chepstow on Jan. 19th the President of the branch (Dr. Francis T. Bond) gave an account of the successful action which he recently took in connexion with an epidemic of diphtheria in the Thornbury rural district of Gloucestershire. For some months cases of the disease were regularly occurring among school children in one portion of the district until it appeared that some decided steps must be taken to put an end to the outbreak. As the centre of infection was apparently the public elementary school material was taken from the throat and nose of each of the 246 children who attended the school. Upon bacteriological examination it was found that Klebs-Löffler bacilli were present in 66 per cent. of the children examined, the bacilli being found in the nasal specimens to double the extent of that in specimens taken from the throat. The school was kept open and for three weeks the throats and noses of all the children in the school were sprayed with a solution of carbolic acid and no further cases of the disease have been reported. The spraying and the swabbing were carried out by a local practitioner at the cost mainly of the rural district council and it is of interest to learn that when the education committee of the county council was asked to pay for the services thus rendered it replied that it had no authority to spend money in this way. Dr. Bond endeavoured to ascertain from the Local Government Board whether the local sanitary authority could properly pay for what he described as the "disinfection" of diphtheria throats. The Board replied that the authority had no express power to spend money for this purpose but it would be for the district auditor to say whether the payments were illegal.

Suggested Amendment of the Rules of the Central Midwives Board.

At the same meeting of the society Dr. J. Middleton Martin suggested some amendments to the rules of the Central Midwives Board with special reference to those regulating the practice of midwives. He considered it inadvisable that women ignorant of their use should be obliged to carry catheters, appliances for giving injections, &c., for to some women the obligation to carry them implied that the appliances *must* be used. The rule which requires personal disinfection of the midwife after attendance upon a case of puerperal fever should be made more imperative and should be so worded as to make it clear that steam disinfection is really necessary. The rule which insists that a midwife shall not leave her patient after the commencement of the second stage Dr. Martin thinks is unfortunately expressed because many midwives do not know the meaning of such terms as presentation, second stage, &c. The rule which gives a qualified assent to the making of an internal examination by midwives he condemned and thought that they should be prohibited from making such examinations until after their methods of practice had been personally watched. As midwives in some districts only attend half a dozen or so of cases in a year it seemed desirable that the supervising authority should have discretion in enforcing the rule which prohibits the midwife laying out the dead, and some hardship might be entailed if she were not allowed to perform this office in the event of the death of either the patient or the baby. These were the most important amendments suggested and in the course of discussion Dr. A. G. Lawrence pointed out that it was really necessary to differentiate between rules for the trained and untrained midwives, for much harm would be done if weapons were put into the hands of untrained nurses with the use of which they were not familiar. He expressed the opinion, as a general practitioner of 45 years' standing, that no untrained midwife could tell a presentation or knew the meaning of the different stages of labour.

Eastern Dispensary, Bath.

The annual meeting of the subscribers to this institution was held on Jan. 18th under the presidency of the Mayor. The medical report stated that 3658 patients had been treated during the year. The financial statement showed that the year closed with an unfavourable balance of £46.

Bristol Medical Dramatic Club.

The Bristol Medical Dramatic Club will give performances of the *Pickpocket* on Feb. 13th and four following days. The proceeds will be devoted towards the purchase of an athletic ground for the Bristol Medical Clubs Union.

Jan. 23rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Morison Lectures at the Royal College of Physicians of Edinburgh.

THESE lectures are to be delivered in the College Hall on Wednesday, Jan. 24th, Friday, Jan. 26th, and Monday, Jan. 29th. The lecturer is Dr. W. Ford Robertson, superintendent of the Scottish Asylums Laboratory, and his theme is the Pathology of General Paralysis of the Insane. Lecture I. deals with "the prevalence and recent increase of general paralysis, current opinions regarding its causation, recent investigations in the Laboratory of the Scottish Asylums and Edinburgh Royal Asylum, bacteriological, histological and experimental researches; the detection of diphtheroid bacilli in the blood, walls of the cerebral vessels, cerebro-spinal fluid, and urine." Lecture II. includes "the experimental study of the action of the living blood upon pure cultures of diphtheroid bacilli isolated from cases of general paralysis and tabes dorsalis; how the results obtained have led to the demonstration of the infective nature of these diseases; search for a specific reaction of the blood in cases of general paralysis." The concluding lecture is confined to "the etiology and pathogenesis of general paralysis and tabes dorsalis. How are these diseases to be combated?"

The Parliamentary Representation of the Universities of Edinburgh and St. Andrews.

The voting papers for the election of a member to represent these Universities in the new Parliament have just been issued. The papers have to be in the hands of the registrar duly signed and witnessed by Feb. 8th. The names of the candidates and the sides of politics to which they

adhere are matters of common knowledge to readers of the daily newspapers.

Women Graduates and the Election of University Parliamentary Representatives.

An interesting point has just arisen in connexion with the election of Parliamentary representatives for the Scottish universities. The point is that women graduates are on the registers of the general councils of the universities and they claim that voting papers should be sent to them. They hold that there is nothing in the Act regulating the universities' elections which distinctly debars them from the privilege and that the duty of the registrars is "to forward to each voter, to his address as entered in the register of the general council of the University, who shall appear from said address to be resident within the United Kingdom and the Channel Islands," the necessary voting paper. The registrars have not taken this view and they are said to be guided by high legal opinion on the matter. The statute dealing with the elections says that "no person subject to any legal incapacity shall be entitled to vote at any election or exercise any other privilege as a member of the general council of any university," and from this the registrars maintain that the women graduates come under the category of those who are "subject to legal incapacity." A meeting of women graduates of the Scottish universities to consider the position has been called for the 27th inst. to be held in Edinburgh. The matter is meanwhile in the hands of a provisional committee of which Miss C. Macmillan is secretary. There is now a large number of graduates in arts and medicine interested in this question and more will doubtless be heard of it.

Royal Medical Society, Edinburgh.

A meeting of this society was held on Jan. 19th, Dr. A. W. Neill being in the chair, when Dr. D. Newman of Glasgow gave a demonstration on Cystoscopy. The lecturer first showed how in cases of disease of the kidney and bladder differential diagnosis is frequently impossible without the aid of the cystoscope, and thereafter, by means of a special apparatus for the purpose, he showed a number of interesting pictures of the appearances of the bladder in health and disease. Dr. Newman, by an ingenious device, demonstrated the appearance produced by normal urine, pus, blood, &c., passing into the bladder from the ureter; and he explained the mechanism of the cystoscope which he uses and which shows a number of improvements on the ordinary instrument, notably a double eye-piece, with the aid of which Dr. Newman had succeeded in obtaining excellent drawings of bladder conditions. On the motion of Dr. Chambers, seconded by Dr. Wells, the lecturer was unanimously accorded a very hearty vote of thanks for his most interesting demonstration.—The presidents of the society have issued invitations to their annual dinner which is to be held on Wednesday, Feb. 7th. Professor T. Clifford Allbutt is to be the guest of the evening.

Scottish Branch of Queen Victoria's Jubilee Institute for Nurses.

The seventeenth annual report of this admirable and useful institution shows continued success. Owing to the resignation of the superintendent, Miss Wade, on account of her health, Miss Cowper has been promoted to fill her post. During the year with which the report deals the council was responsible for 41 nurses and probationers. There are now 268 Queen's nurses in Scotland working under 174 affiliated branches; and the last report of the council of the institute gives the number in England as 672 in 335 branches, in Wales 100 in 75 branches, and in Ireland 94 in 81 branches. As the report says, the fact that the nurses of the institute are to be found in districts ranging from a crowded manufacturing town to a sparsely peopled Highland estate "is an encouraging evidence of the adaptability of the system of nursing recommended by the institute."

The Eyesight of School Children.

The London County Council led the way in the matter of making a systematic examination of the eyesight of school children and Glasgow and Govan school boards have been following its example. In an interesting paper read before the Royal Philosophical Society Dr. W. B. Inglis Pollock summarised some of the results obtained by a routine examination of the eyes of scholars in three schools under the Govan board. In one school there were 8·2 per cent. with defective vision and 21·6 with fair vision; in another the corresponding figures were 9·2 and 12·7 per cent.; and in the third they were 22·2 and 30·3 per cent. Taking the three schools together, the defective percentage remained very constant for the young children, and then gradually fell during the ages of ten to 14 years, when it increased very rapidly. Dr. Pollock pointed out that 12 per cent. of all scholars had hypermetropic astigmatism, which meant that by the age of 35 years all such individuals would need to use glasses for near work. Many workmen of that age stated that they would be thrown out of employment if they put on glasses but Dr. Pollock thought this was a mistaken policy on the part of the employers, as in engineering works men would be better protected with glasses from "fires" and chips of steel, and thus companies would save the money paid in compensation for the time men were off work being treated for ulcers and wounds of the eye. As matters now stand, however, it was advisable that hypermetropic boys should be warned not to enter upon trades where they were likely to lose their employment at an early age, and the only way to detect such cases was by a systematic examination of all boys on leaving school. Among 3183 children 71 had squints. The percentage of myopia began as 1·7 at the age of five years, rose steadily to 8·4 at 13 years of age, and thereafter rose with a bound to 25 at 18 years of age. These statistics need no comment.

Jan. 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Election of a Direct Representative for Ireland on the General Medical Council.

SINCE Jan. 22nd the voting papers for the above election have been gradually distributed among the 2800 electors. The count is fixed to take place on Saturday next, Feb. 3rd, and there is considerable interest as to the result of the contest which is taking place between Sir William Thomson, the sitting member, and Dr. Leonard Kidd of Enniskillen. It is well known that many hundreds of the country medical practitioners of Ireland are in favour of supporting a member of their own body and it is therefore by no means certain that Sir William Thomson may not be displaced, although his ten years of good work on the Council are appreciated by all classes of the profession in Ireland. A second motive will also dictate votes in favour of Dr. Kidd. It happens that all the other Irish members of the Council—Sir John W. Moore, Sir Christopher J. Nixon, Sir Thomas Myles, Dr. James Little, Dr. Edward H. Bennett, and Lieutenant-Colonel F. G. Adye-Curran—are residents in Dublin, and there is a feeling abroad that the rest of Ireland would be better represented by someone not living in the capital.

Public Health of Dublin.

The last meeting of the public health committee of the corporation took place on Jan. 17th when Sir Charles A. Cameron reported that the death-rate was very low during the previous two weeks as compared with the corresponding period of the last ten years. The general death-rate was 23·3 as against an average of 33·7 per 1000. The zymotic death-rate was 0·9 per 1000 as against 2·9 for the corresponding period of the previous ten years. Of the total number of deaths no less than 52, or nearly one-third, were among children under five years of age and of these a majority had not reached one year. The last meeting of the governors of Cork-street Fever Hospital took place on Jan. 18th, when the medical superintendent reported that a large number of severe cases of pneumonia and erysipelas were admitted during December, also cases of diphtheria and scarlet fever, while the number of cases of enteric fever had decreased. With reference to a proposed sanatorium for consumption at a meeting of the corporation held on Jan. 22nd Sir Charles Cameron received the permission of the public health committee to convene a meeting of the representatives of the urban and district councils of the county of Dublin to consider the subject of the establishment of a sanatorium for the treatment of consumption.

Death of Dr. Henry S. Purdon.

I regret to announce the death on Jan. 21st, after a painful and tedious illness, of Dr. H. S. Purdon of Belfast at the age of 62 years. The son of a former well-known medical

practitioner in Belfast—Dr. C. D. Purdon—Dr. H. S. Purdon studied in Belfast, Dublin, and Glasgow, where he graduated M.D. in 1865, and in the same year he became L.R.C.P. of Edinburgh, having also in the previous year become a Licentiate of the Royal College of Surgeons in Ireland. After commencing practice in Belfast, he became physician to the old Royal Hospital, a position which he resigned on being appointed certifying factory surgeon for Belfast in succession to his father—a lucrative post. He was also physician to the Belfast Charitable Society and to the Forster Green Hospital for Consumption and Diseases of the Chest. He opened a dispensary for skin diseases in 1865, which subsequently, owing to the munificence of the late Mr. Edward Benn of Belfast, developed into the Skin Hospital with 18 beds. For many years he was the leading Ulster medical authority on cutaneous diseases and wrote many papers on the subject and was also for a time editor of a "Journal of Cutaneous Medicine." Dr. Purdon was fond of music and antiquities and at one time was a member of the choir of St. George's Church, Belfast. He was a genial and kind-hearted man with many friends among the profession and the public. He leaves a widow, three sons (two of whom are medical men), and five daughters.

Longford County Infirmary.

An unfortunate state of affairs has arisen at Longford County Infirmary through the existence of serious differences of opinion between the medical officer and the committee of management. In his monthly report presented at a meeting of the committee held on Jan. 17th, Mr. Nathaniel Mayne, the medical officer, complained that certain extra duties recently assigned to him would require him to be in constant attendance at the infirmary and would thereby preclude him from undertaking private practice. A published report of the events of this meeting shows that the committee in sanctioning or refusing the supply of medical and surgical appliances takes the advice not of Mr. Mayne but of the matron and the registrar. In a letter published in the *Irish Times* of Jan. 19th Mr. Mayne makes a very reasonable reply to a charge made against him of admitting patients without tickets, his explanation being that the applicants for admission were too ill to be sent away.

Jan. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Professional Secrecy and the Examination of Prostitutes.

AT the meeting of the Society of Legal Medicine held on Jan. 8th M. Butte said that one argument employed by those who objected to the State examination of prostitutes was that the medical men whose duty it was to carry out the examinations could not legally fulfil such duties. They could not, because in sending in to the authorities the diagnosis of the diseases which they found in the women who came to them they had to violate their oath of professional secrecy. M. Butte argued that no violation existed. The medical men who are attached to the particular department in question of the State are not, so far as these duties go, practising medical men. They act simply as experts and as delegates of the prefect of police just in the same way as do inspectors of wet nurses. The woman who comes to any one of them does not confide in him, she knows that she goes to be examined and why she does so. This being so there is no secrecy about the matter and, consequently, no violation of secrecy.

Bilateral Tarsectomy for Double Club Foot.

At the meeting of the Surgical Society held on Jan. 8th M. Broca read for M. Jeanbrau a paper dealing with the case of a young man, aged 20 years, who suffered from double club foot due to paralysis. M. Jeanbrau had obtained a good result by performing an extensive tarsectomy on either side, several bones being removed. M. Broca thought that a good result might always be looked for in such cases, at least in the adult. The case reported by M. Jeanbrau was, however, a striking example of the good results to be obtained by putting up the foot after tarsectomy in an immobile apparatus after having previously placed it in good position. The apparatus was not removed until the foot had become fixed in the new position. In the case in question one foot had been immobilised and the other had been treated by gentle movements and early massage. A much better result was obtained in the immobilised foot than in the other one.

Administration of Drugs by Night.

At a recent meeting of the Therapeutical Society M. René Laufer drew attention to a fault of omission which is very common in the use of drugs. The general custom is to give drugs by day, generally at meal times, and no notice is taken of the fact that it would be quite possible to vary the time of giving them with good results. A large number of pathological conditions occur at night, such as asthma and epileptic fits; others are increased at night, such as syphilitic pains. Others which go on steadily all the 24 hours are only treated during the day, that is to say, during half the time of their existence. To this pathology of the night it is only reasonable to oppose a therapy of the night. As in the case of certain fevers quinine is not given at meal times but at certain definite periods before the access of the fever, so in pathological conditions the administration of the selected medicine ought to be given at not too long a period before the manifestation of the attack. M. Laufer related five cases in support of his argument, one being a case of asthma where iodide given at night entirely prevented the attack although the same dose given by day had no effect in preventing the attacks. M. Laufer has used the same method of administration of drugs in certain cases of neuralgia and bronchitis. He noted that when a drug is given at night its activity is markedly increased on account of the rapidity of absorption. In practice he finds that the best method of administering drugs at night is to divide them into two doses, one to be given on going to bed and the other in the middle of the night.

Cervical Actinomycosis.

At the meeting of the Society of Dermatology and Syphilography held on Jan. 11th M. Pautrier showed a patient who was an agriculturist and who had been in the habit of chewing ears of grasses. In September, 1903, he presented a tumour at the angle of the jaw on the left side in which were found the characteristic yellow granules of actinomycosis. To remove it a portion of the angle of the jaw had to be taken away as well. Four months later cutaneous lesions began to develop in the neck and here also were found actinomycotic granules. Treatment by iodides had not so far brought about any improvement.

Jan. 23rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Experiments on Syphilis.

Professor Neisser of Breslau, together with his assistants, Dr. Baermann and Dr. Halberstädter, has visited Batavia, in the island of Java, for the purpose of studying the inoculation of apes and monkeys with syphilis and a lengthy report of his work has been published by him in the *Deutsche Medizinische Wochenschrift*. Orang-outangs, gibbons, and macaques were used for these experiments, the virus being taken from hospital patients. It was found that the incubation period varied from 15 to 65 days, in the majority of cases being from 26 to 45 days. The virus was inoculated into scarifications. The primary chancre which subsequently appeared varied considerably in superficial extent and in depth but, as a rule, was very like human chancre. Virus taken from recent chancres produced more characteristic symptoms than other virus, that from chancre in the course of healing did not produce any positive results, whilst the effects of those from primary adenitis, condylomata, and plaques muqueses were marked. Material taken from a gumma produced chancre in two out of three cases and it was remarkable that the incubation period in these cases was exceptionally long. Inoculation of human blood and blood serum proved negative and of the organs only the spleen, the glands, the bone marrow, and the testicles gave positive results. Professor Neisser says that he is not sure whether there is a difference in the virulence of the infective material according as it is taken from the human subject, from the orang-outang, or from lower monkeys, but apparently the virus became stronger by passage through different animals. It is remarkable that the higher species of monkeys are more liable to syphilis than the lower and that in the higher species the virus may be successfully inoculated in every region of the body, while in the lower species the inoculation takes effect only in the eyebrows and in the

genitals. This local immunity of macaques could not be overcome either by inserting the virus into artificial wounds of the skin or by combining the syphilitic virus with vaccine. With regard to the course of the disease it was found that in the lower monkeys the animal's general state was not at all altered, whilst in orang-outangs dyspepsia, dysentery, and debility showed themselves. Primary adenitis was observed only in the anthropoid apes; in the lower species glandular changes were not perceptible until the necropsy was made. As to the secondary symptoms, papular exanthemata were observed in some of the gibbons on the face, on the abdominal and gluteal regions, on the hands, and on the mucous membranes. In the orang-outang no secondary symptoms developed; in the lower monkeys there were local eruptions of annular and serpiginous form in the neighbourhood of the primary chancre. Professor Neisser further states that he was unable to produce syphilis by subcutaneous injection, either in gibbons or orang-outangs or lower monkeys, nor was immunity obtained by these injections. The virus is therefore obviously destroyed in the subcutaneous tissue of a healthy animal, but possibly subcutaneous injections of the virus into a syphilitic animal may produce immunising antitoxins. The experiments are, however, not yet finished. Injections into the blood-vessels and into the peritoneal cavity were also unsuccessful. It was found that the virus lost its efficacy within six hours; material taken from a dead body after 18 hours was inert and attempts to preserve it by means of glycerine, paraffin, and other substances were unsuccessful. Experiments were also carried out for the purpose of ascertaining whether the development of syphilis could be cut short by excision of the place of the injection at varying intervals previously to the appearance of the chancre, the result being that the chancre developed in eight out of 14 cases. In two cases there was no formation of chancre, while in the remainder either the appearances were uncertain or the animal died at an early stage. It is remarkable that in one case where the part was excised eight hours after the infection chancre nevertheless developed. Other experiments were made for the purpose of determining the time within which syphilis may become general but were not yet finished. The administration of mercurials did not prevent the eruption of general syphilis. Professor Neisser finally discusses the possibility of immunisation against syphilis and the results of bacteriological examinations. He stated that the spirochæte pallida, recently alleged to be the cause of syphilis, was probably in etiological connexion with the disease but that practically the presence or absence of the spirochæte did not prove anything either for or against the question of infectivity. Professor Neisser has returned to Germany but the research will be continued by his assistants who remain in Java.

A Model Institution for Infants.

On the occasion of the silver wedding of the German Emperor and Empress a series of benevolent institutions will be founded by public subscription. One that will certainly be received with approval by the medical profession is a model institution for infants. At a meeting of the committee under the presidency of Dr. Schönstedt, late Minister of Justice, when among others Dr. Heubner, professor of children's diseases in the University of Berlin, was present, some particulars were given about the proposed institution. The "infants' home" is to be erected at Charlottenburg, a suburb of Berlin, on a site presented to the Empress for this purpose by the municipal authorities of that town. The institution will include several departments. In the first department pregnant women will be received three months previously to their confinement and after it they will stay there for a fortnight. The children must be fed by the mother and they are therefore transferred to another department termed the "mothers' home," where they stay for three months. For children who have to be fed artificially on account of their mothers being unable to suckle them a third department will be provided, where, moreover, children born outside the institution are to be received. A fourth department is destined for sick infants. In connexion with the institution there will be a large dispensary (*Fürsorgestelle*), which will undertake the after-care of mothers and children who have left the home and where mothers and pregnant women may obtain advice and will be provided with food. Large chemical and bacteriological laboratories and a model cow-house are to be erected, and in addition to the medical and nursing staff a training school for special nurses for children will be attached to the institution.

Jan. 22nd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Measles in Milan.

THE health conditions of the Lombard capital have a more than domestic importance. Representatives of every nationality in Europe pass through Milan or pause on the wing within its gates on their way to or from the great Italian centres or to or from Egypt and the Far East. Short as is their sojourn, it is, as experience has shown, quite long enough to expose them to the risks of infectious disease which in one form or another is never quite absent from a city the water-supply of which is still drawn from subsoil or other sources leaving much to be desired. In the day now passing it is measles which is the most prevalent in the Milanese environs and central quarters—measles not only of a pronounced infective type but prone to assume complications mostly broncho-pneumonic in character. Starting from the communal villages, where the returns for December give 212 cases at Boffalora Ficino, 146 at Abbiategrasso, 43 at Assago, 100 at Magnago, 45 at Turbigo, and 40 at Canegrate, it has invaded the city itself till the sojourner within it can hardly venture with safety into its railway station, or its galleries, or its houses of public entertainment, or even its tramcars and omnibuses. It is but just to say, however, that the sanitary authorities are fully alive to the danger besetting the city and are carrying out the most stringent precautions by way of circumscribing its "sphere of influence." All cases, for instance, declaring themselves in schools, asylums, and industrial establishments employing juvenile labour, are at once isolated and subjected to appropriate treatment, and so far with a success which implies intelligent coöperation on the part of the heads of the said establishments or institutions. As a great *entrepôt* of foreign travel Milan owes it to the outside world from which she derives so much solid gain to follow up the sanitary measures which she is now putting in practice with a still wider and more thorough-going programme which will include improvement of her water-supply and the sweeping away of her "fever preserves."

The New Surgical Clinique at Pisa.

The ancient University of Galileo and Cesalpino, of Vacca and Puccinotti, has been holding high festival on the occasion of the opening of its "Nuova Clinica Chirurgica." This adjunct to its teaching equipment, long required but inevitably postponed, has at length been carried to completion, mainly through the energy and personal influence of Dr. Antonio Ceci, professor of surgery in the Pisan School and respected throughout Italy as one of her best teachers and operators in that department of medicine. Private liberality on his own part and on that of his friends, reinforced by munificent contributions from the King and the Government, has been rewarded by the realisation of its object in the fine, commodious, and eminently serviceable structure in which the Pisan medical student will now perfect himself in surgery under conditions second to none in any other Italian seat of learning. The inaugural ceremony, in which the Senatus Academicus of Pisa and representatives of all the other sister universities took part, was graced by a peculiarly felicitous address from the rector, Professor David Supino, who took occasion to review the successive stages through which surgical and medical practice and teaching had passed within the Pisan School itself—from the days when in 1543 there were two necropsies within the twelvemonth, graciously conceded or authorised by the Grand Duke, to the present time when every year witnesses 300 necropsies at least; while no farther back than 1870 the number of operations averaged 70 per annum and now there are as many as 500 within the same period. After the rector came the professor of clinical medicine, Dr. Queirolo, who, speaking in the name of the Minister of Public Instruction, evoked repeated salvoes of applause in his enumeration of the services of Professor Ceci and of the architect, Professor Caselli. He was followed by these two latter who, each in his own department, drew an impressive picture of the difficulties to be surmounted before the result so universally admired could be achieved.

In the evening Professor Ceci entertained at the Hôtel Nettuno a large number of guests, including the local medical faculty and the delegates from the sister schools and again the oratory was of that brilliant character traditional in the academic Saturnalia of Italy.

Jan. 22nd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Hypertrichosis graviditatis.

A NOVEL symptom of pregnancy, or at least one which has received little attention, has been noted by Dr. Halban and he made it the subject of a paper which he read at a recent meeting of the Vienna Gynæcological Society. He had noticed for several years that brunettes who in Austria very often show rudiments of a moustache developed during pregnancy a fairly visible masculine type of hair on the upper lip. Systematic observation has convinced Dr. Halban that pregnancy stimulated excessive growth of hair not only on the face but also on all other parts of the body. In particular the lanugo of the abdomen and the extremities was very often influenced by pregnancy, but Dr. Halban was not prepared to state whether the hair of the axilla or pubes was affected. The increased growth might be noticed from the second month of pregnancy and continued till the end of normal gestation or, to speak more exactly, till the expulsion of the placenta, when these hairs had a tendency to fall out again, as could be seen very clearly on the mammæ and on the linea alba, where hair of from one to two inches in length might disappear a few days after delivery. Dr. Halban thought that certain active principles connected with the placenta or with the epithelium of the chorion were responsible for the changes by producing hyperæmia and thus better nutrition of glandular organs, as is already known for the mammæ. This hypothesis, which was well supported by many experiments on rabbits and dogs, would give a good explanation for the increased growth of the hair seen on the fœtus from the sixth month, and would be consistent also with another fact noticed by a number of obstetricians—namely, that many females who become pregnant at a time when the growth of their bones has not yet been arrested grow more rapidly during pregnancy than either before or after it. The women became aware of this by finding that the skirts which they had been wearing for six months required to be lengthened.

A Case of Congenital Dilatation of the Colon.

Professor Escherich recently showed at a meeting of the Pediatric Society some specimens taken from a child, three and a half years old, who had been suffering since birth from a very rare form of intestinal disease called Hirschsprung's disease after the name of the observer who first described it. The birth was normal but the child's abdomen was enormous. An enema which was immediately administered succeeded in bringing away three-quarters of a pint of meconium and after a few hours the infant vomited masses of meconium. The abdomen diminished a little but it remained always unusually large, with a well-marked caput medusæ (dilatation of the umbilical veins). Evacuations of the bowels had to be obtained by enemata, as spontaneous motions never occurred. Therapeutic measures in the form of faradic irritation of the abdominal muscles, massage, and passive exercises intended to strengthen the muscular walls were tried but without any appreciable effect. When the child was weaned the condition was still worse. An operation was ultimately performed, the ampulla recti, with a part of the colon, being amputated but the child died soon afterwards from exhaustion. The post-mortem examination revealed an enormous dilatation of the cæcum, the transverse colon, and the sigmoid flexure, whilst the muscular coats of the parts lying between the distended sections were greatly hypertrophied, the increase taking place chiefly in the stratum of circular muscles. The stomach measured only two and three-quarter inches in its longest diameter. There are only 50 cases of such a condition on record. It is mostly congenital; it may also be acquired very early in childhood and is usually fatal from auto-intoxication or exhaustion.

Sarcoma of the Mediastinum.

Dr. Sternberg showed on a recent occasion some of the viscera of a man who died half an hour after admission to hospital and who presented extensive œdema of the upper half of the trunk and arms and cyanosis of the face. The necropsy explained the condition. A spindle-celled sarcoma occupied the whole anterior half of the mediastinum, had attacked both lungs, and was three inches in thickness on the frontal aspect of the heart. The pericardium had disappeared and the right auricle, the right ventricle, and part of the left ventricle were in contact with the diaphragm. The remainder of the heart was invaded by the heteroplastic mass and could not be detached from it. The cavities of the heart were exceedingly narrow and the muscle was very friable. All three coats of the aorta and the pulmonary artery were involved in the tumour and from the ostium of the superior vena cava there protruded a long polypoid mass into the lumen of the auricle. The vein itself was nearly blocked by the tumour, only a very narrow lumen being left. Numerous secondary deposits were found in the lungs and the liver. The interest of the case centred in the abnormal mechanical condition involving the heart. It was hardly possible to surmise in what manner the systole and diastole of the heart took place, as nearly the whole of the muscular wall was fixed by unyielding tissue and as there was no pericardial membrane left. Another remarkable fact was the absence of deposits within the bones or in the lower parts of the body, although the vessels were mere canals within the foreign mass.

Spirochæte Pallida in a Primary Chancre and in the Liver.

Dr. Volk, who is endeavouring to prove the existence of the supposed micro-organism of syphilis in all manifestations of that disease, has prepared several films from an excised chancre in which there could be seen several spirochætes within the fibres of the connective tissue and between the cells of the deep portions of the Malpighian layer. They were stained by Levaditi's method, which has the effect of rendering the micro-organism black by a precipitate of silver. Out of five slides only one was useful, illustrating the difficulty of looking for the faintly coloured organism. In the liver they were found much more frequently. The liver was that of an infant, aged six months, who had died from intestinal catarrh, and in whom syphilitic symptoms were manifest at birth, but subsided quickly after treatment with iodine. In the blood of the patient from whom the chancre had been excised the spirochæte had been found on several occasions but could not be demonstrated as the films were spoiled.

Jan. 20th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A New Hospital for New York City.

THE late Mr. Charles T. Yerkes in his will directed that a sum not to exceed $800,000 is to be used for the purchase of a suitable site and the erection thereon of a hospital building in the Borough of the Bronx, a section in the northern part of the city now growing very rapidly and at present but poorly supplied with hospital facilities. The support and maintenance of the hospital are also provided for by the setting apart of an endowment fund of about $5,000,000, the income of which is to be used for this purpose. The testator further directs that the institution shall be open to the public without regard to race, creed, or colour, and that those unable to pay shall be cared for free of all charge. According to the provisions of the will the necessary funds would not be liberated for this purpose until after the death of Mrs. Yerkes who is to receive the income of the residuary estate during her life but she is said to have expressed the intention, if legally possible, of beginning the work at once.

Obstetric Rarities.

From Bristol, Virginia, comes the remarkable story that a ten-year-old coloured girl of that town has just been delivered of a full-sized infant. To parallel this it is reported from Albany in New York State that a woman, aged 20 years, a short time ago gave birth to a child 116 days after having brought another infant into the world. The first labour was attended by a midwife but the medical man who was present at the second one states that both children are normal.

A New Army Hospital.

Congress has provided for the erection of a new Army General Hospital at Washington at a cost not to exceed

$300,000 for the building. A site has already been selected and plans have been prepared and accepted.

Ambulances at Fires.

According to an arrangement which has been made with the larger hospitals of Philadelphia an ambulance will henceforth be present at all fires within the urban area. The city has been divided into suitable districts and each hospital is to respond to fire alarms occurring in its portion.

Football Accidents.

An interesting confirmation of the view that the current public disapprobation of the game of football as now played is not ill-founded is furnished by a recent publication in the *Boston Medical and Surgical Journal*. Dr. Edward H. Nichols and Dr. Homer B. Smith, the two surgeons upon whom devolves the care of the football squad of Harvard University, have summarised the result of their professional attendance on the players and arrive at conclusions quite in accord with the belief that the game involves risks of physical injury disproportionate to its value as an athletic exercise. A table is given showing the injuries received during the season extending from Sept. 12th to Nov. 25th, 1905, by the football squad, which represents a real playing strength of about 70 men. The list of important injuries reaches the total of 145. The injuries most often noted are cuts (requiring stitches), sprained ankle, cerebral concussion, and dislocation of the acromial end of the clavicle. These all occur ten or more times, the number of concussions, for example, being 19, and only two games were played in which an accident of this sort did not occur. A case of middle meningeal hæmorrhage, four fractures of the brim of the pelvis, and seven broken noses also figure in the table. The authors describe the general plan of treatment of the common injuries, which in some respects differs from that usually employed owing to the necessity of taking some chances in accordance with the imperative demands of the patients to be allowed to return to play at an earlier date than would be usual in ordinary practice. Considerable importance is attached to the fact that owing to the precautions taken to secure extreme personal cleanliness by insisting that only fresh towels should be used, the underclothing be changed frequently, &c., no infected wounds or skin infections occurred. As a result of their experience the authors reach the conclusion that the number, severity, and permanence of the injuries received in playing football are much greater than is generally credited or believed. The greater number of the injuries come in the "pile" and not in the open plays, although serious injuries also occur in the open. The number of injuries is inherent in the game itself and is not especially due to competition, as is shown by the fact that the proportion of injuries received in games and in practice is about the same. Most of the injuries are unavoidable and their percentage is incomparably greater in football than in any other of the major sports. The game does not develop the best type of men physically, because too great prominence is given to weight without any corresponding development of nervous energy. The percentage of injuries is too great for any mere sport and it is a question if a game requiring the constant attendance of two trained surgeons is played under desirable conditions.

Medical Men and Pharmacists.

The medical men and druggists of the State of Iowa are at variance and have been accusing each other of encroaching on their respective privileges. The mutual recriminations have reached such a point that the State government is to be appealed to, and each camp is circulating a petition for signatures which will later be presented in the form of a Bill before the legislature. The grievance of the medical men is that the druggists have made a practice of "counter prescribing," while the pharmacists allege that they have been driven to this usurpation of medical prerogative by the tendency of the physicians to furnish drugs to patients instead of writing prescriptions.

Urban Health Conditions.

New York city's death-rate for 1905 makes a very favourable showing as compared with previous years. In 1904 the mortality per 1000 was 20·01 but in 1905 it was reduced to 18 25, which is next to the lowest figure on record. The number of deaths from contagious disease is lower than ever before. In 1905 the births numbered 103,852, a gain of 4297 over the statistics of the previous year. The marriages also were more numerous, for in 1905 42,667 were registered, as against 39,436 in 1904. The deaths were decreased almost exactly as much as the births increased, for the deaths in 1905 were 73,450, while for 1904 they were 78,060. In Chicago the death-rate has also been greatly reduced, and during one week in December it was only 12·80 per 1000, which is the lowest figure ever recorded in that city. For the entire year of 1905 it was less than 14 per 1000. The average duration of life in 1873 was 15 years, but now the average age of those dying is over 32 years. Philadelphia has been suffering from an epidemic of measles and in one week 201 cases of this disease and 152 of typhoid fever were reported.

Jan. 16th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Mahomedan Pilgrim Traffic from Bombay.

THE pilgrim traffic for Mecca from the port of Bombay is very considerable and involves great expense as well as elaborate precautions. Bombay being a plague-infected city, quarantine for these pilgrims is obligatory according to the Venice Convention. It appears that the quarantine camp provided by the Government has not been sufficiently large and that pilgrims who could not pass into the camp have been roaming in large numbers about the city of Bombay. Many of these people are utterly destitute. An attempt has been made to do away with the quarantine camp but that is at present impossible and the port of embarkation must either be changed or provision for a larger number made in the camp. By removing the port of embarkation to a non-infected place quarantine would become unnecessary and a medical inspection would be sufficient. In this case there would be always the danger of plague breaking out amongst the pilgrims on board ship as it is impossible to detect cases in the incubative stage and the consequences of this accident would be very troublesome. The wisest course is to increase the observation camp according to the number of pilgrims, which would probably prove in the long run the least expensive measure. An announcement is made annually of the numbers of pilgrims who leave India for Mecca but there are no corresponding figures for the numbers who return. Old and infirm as the majority are the mortality amongst them must be considerable and the hardships which these people go through on arrival in the Turkish dominions have been reported upon over and over again. It is also known that the majority of those who do come back to India return penniless and many of them have to be helped to get back to their native places.

A Fresh Census for Bombay City.

The last census indicated that the city of Bombay had decreased in population. This was attributed to plague which in the five years had probably stricken down 100,000 people. Many of the inhabitants had also left the city for the country districts. As the fear of plague has now diminished and the population has apparently again increased it has been urged upon the corporation to take a fresh census. This will be done for the town and island of Bombay on the night of Feb. 9th. It is probable that immigration into the city has made up the population to the old figures and the value of the census for statistical purposes is obvious. The mortality-rate based on the census of 1901 is very high.

Reservoir Leakages and Fever in Bombay City.

For some time past leakages have occurred from the Malabar Hill and Bhandarwada reservoirs in the city of Bombay and the surrounding areas of ground have been sodden and swamped. Associated with this condition these surrounding areas have been fever-stricken. The corporation has now called for a report. Since 1901 the health department has taken steps to keep the tanks themselves free from mosquitoes but the danger covers a much wider area and the necessity of treating all the pools and ditches and surface collections of water as well as the wells, fountains, and drains by an active anti-mosquito campaign is recognised as imperative pending the carrying out of the engineering measures required for the repair of these huge reservoirs. The anopheles mosquitoes have been abundantly found in nearly all parts of the city but the pools and swampy places occasioned by these leakages have been their chief breeding grounds.

The Plague Epidemic.

The plague mortality figures for India show fluctuations which are probably sometimes due to faulty returns. For the week ending Dec. 23rd, 1905, 3170 deaths were recorded but several districts are omitted from the usual list. The details are: Bombay Presidency, 720; United Provinces, 761; Bengal, 639; Central Provinces, 400; the Punjab, 314; Mysore State, 124; and Burma, 77. The figures for the large cities are not published.

The Work of the St. John Ambulance Association in India.

The report for the year of the work of the St. John Ambulance Association in India has just been issued and shows a marked activity in several of the more important and populous centres. A central committee at Simla now governs the Indian branch but the various provincial centres manage their own affairs. The chief work seems to be amongst the European population (also the Parsi) but a considerable amount of instruction has been given to natives. The railways have been very active and a large proportion of their employés have gone through the "first-aid" course. A challenge shield is competed for annually amongst the railways and also amongst the volunteers. In Bombay an ambulance brigade and a ladies' nursing division have been formed and it is proposed to form a reserve to augment the nursing establishment in time of war. The police of Calcutta and Bombay have all been instructed in first aid to the injured and a better organisation has been established in these two cities in the event of accidents. The members of the medical profession appear to have given their services in all cases but it is quite a question whether the time has not come, as in England, when instruction and examination should be paid for.

Jan. 5th.

Obituary.

HARRY CAMPBELL POPE, M.D. LOND., F.R.C.S. ENG.

Dr. H. C. Pope, who died on Jan. 2nd, in his fifty-sixth year, was the son of the late Mr. E. Pope, M.R.C.S. Eng., of Tring. He received his medical education at Liverpool and at University College, London. After taking the M.B. Lond. with honours he became successively medical tutor and demonstrator of anatomy at the Queen's College, Birmingham, and house surgeon to the Seamen's Hospital, Greenwich. Upon the expiration of his term of office he married and settled in practice at Shepherd's Bush. Having taken the F.R.C.S. Eng. in 1876 and graduated M.D. Lond. in 1878 these qualifications, together with his personal character and various gifts, soon gave him a leading position in the western district of London. This was very manifest in connexion with the West London Medico-Chirurgical Society, in which he was constantly put forward in various representative ways by his neighbours and colleagues. He always represented them with dignity and good taste, speaking with ease, sound sense, and a frequent touch of humour, occasionally playfully descending into a pun. He had a calm, easy-tempered, good-natured disposition which made him very pleasant to work with. He filled nearly every possible office in connexion with the West London Medico-Chirurgical Society, being a member of council from its commencement, 25 years ago, and its president in 1889. He also took a very active part in the management of the Medical Defence Union, of which he was a vice-president. Dr. Pope had from the beginning of his entering the professional ranks as a practitioner a large private practice and his patients saw in him not only a valued scientific physician but also an accomplished friend. His chief recreation was music, in which he was well skilled. He played both the piano and the organ, but above all he had a pleasing and powerful baritone voice and was a cultivated singer. Many of our readers will remember the pleasure he has often given them on various social occasions, public and private. In appearance he was a man of portly build, with good features and a quiet expression, although his dark eyes frequently lighted up with the humour already referred to. There are probably few persons of whom it could be more truly said that he was universally liked and trusted and had no enemy. His death was very sudden and a severe blow to his many friends and patients. Able, accomplished, and altogether devoid of restless ambition but, at the same time, ever ready to do whatever duty or good work lay in his immediate way, his friends, while grieving at his departure, feel that his life is a very pleasant one to look back upon. His personality, much that he said, and more that he did, will be vividly remembered by many people when the celebrity of more prominent public characters will be nothing but the mere memory of a name. He was not a frequent or voluminous contributor to medical literature but in his many quiet speeches at medical societies he contributed altogether a great volume of practical experience and in that manner made public in brief the details of many interesting cases. He was buried in Hammersmith Cemetery, the funeral being attended by many old private friends, including Dr. Frederick T. Roberts, whose friendship dated from Liverpool days, and by official representatives of the societies to which Dr. Pope had belonged. He leaves a family of two sons and three daughters to mourn their loss, the elder son being a student at St. Mary's Hospital.

WILLIAM WINGATE WINGATE-SAUL, M.D. HEIDELB., M.R.C.S. ENG., L.S.A.

Dr. William Wingate Wingate-Saul, who died on Jan. 22nd at his residence, Fenton-Cawthorne House, Lancaster, was one of the foremost and most respected citizens and public men of the town. About 18 months ago failing health compelled him to give up practice and he was confined to his room for many weeks before the end came. He was the third son of Mr. William Saul of High Ferry House, Sibsey, Lincolnshire, and grandson of Captain B. Kelsey Saul, who commanded the Sibsey volunteers a century ago, and a direct descendant of Colonel John Saul, who, for his gallant defence of Croyland Abbey in the Civil War, received the freedom of King's Lynn. He was born at High Ferry House on July 24th, 1842, and assumed the additional surname of Wingate by deed poll dated June 18th, 1891. His early education was received at King Edward VI. School at Louth—the school of Tennyson, the Lincolnshire Laureate, and Tom Hood—and in due course he studied medicine at St. Bartholomew's Hospital and the University of Heidelberg. In 1867 he took the diplomas of M.R.C.S. Eng. and L.S.A., and in 1870 he graduated as M.D. at Heidelberg. In the last-mentioned year he went to Lancaster at the suggestion of Sir James Paget and Sir Richard Owen to join Mr. Langshaw in partnership, and he succeeded to the practice on the retirement of Mr. Langshaw.

Many public positions have been filled by Dr. Wingate-Saul in Lancaster. For nearly a quarter of a century he was surgeon to the civil and military prisons at Lancaster Castle and had several notable people under his care. For a short time he was on the staff of the Lancaster Infirmary when the institution was situated in Thurnham-street, and during the whole of the time he was in practice he was medical officer to the Royal Grammar School and to the Ripley Hospital. For 22 years Dr. Wingate-Saul was an officer in the Duke's Own Yeomanry and always took great interest in everything concerning the regiment. He joined the regiment in June, 1881, with the rank of surgeon-captain. In June, 1901, he was appointed lieutenant-colonel and on his retirement, after 22 years' service, he was raised to the rank of colonel and granted permission to wear the uniform of the regiment. The "Duke's Own," now known as the Duke of Lancaster's Own Imperial Yeomanry, was founded about 1800 and is therefore one of the oldest volunteer cavalry regiments in England. It was brought into special prominence during the Chartist riots of 1818 and the charge of Peterloo consequent thereon.

Dr. Wingate-Saul was the founder of the Lancaster centre of the St. John Ambulance Association. He was the first lecturer for the association in Lancaster, was awarded the medal of the order, and at the time of his death was one of its honorary associates. He was chairman of the local branch of the Royal Society for the Prevention of Cruelty to Animals ever since its formation and assisted the work of the branch materially. He was always in sympathy with the feelings of dumb animals and was particularly emphatic against the use of the now universally condemned tight bearing-rein. He was one of the original members of the County Club at Lancaster; a member of the Red Rose Club, established as a bond of connexion between the past and present officers of Lancashire regiments of militia and yeomanry; and chairman of the Ratepayers' Association

which he assisted to form. His tastes were chiefly in the direction of literature, art, and music. He was for some time president of the Orchestral Society and chairman of the Choral Society. It may be worthy of note that he used at several public performances a Stradivarius violin, purchased by a cousin of his father in 1826. He had played on it since he was a boy and it is described as an exceptionally fine model of Stradivarius's best type of violin. He owned, too, a very fine Amati. Dr. Wingate-Saul was also the possessor of two very fine examples of Romney's work—life-size portraits of the Fenton-Cawthorne family. He was a member of various societies outside Lancaster, such as the Hackney Horse Society, the Polo Pony Breeding Society, and several agricultural societies, including the Royal Agricultural Society of England, with which, however, he ceased to be connected on the council moving the annual fixture to Park Royal near London. Amongst other breed societies with which he was connected may be mentioned the English Kerry and Dexter Herd Book Society and the Large Black Pig Breeders' Society.

For some years Dr. Wingate-Saul was a member of the central committee of the Royal Albert Asylum at Lancaster and he took a warm interest in all concerning the institution and the welfare of the patients. A few years ago he gave to the institution a chalet for the open-air treatment of tuberculous disease. His generosity induced another member of the central committee to do likewise, and the results that have followed this new treatment have been very satisfactory. Dr. Wingate-Saul was a member of the Rowley Lodge of Freemasons and also of the ancient society of John O'Gaunt Bowmen.

The deceased gentleman was a *laudator temporis acti*, a Conservative and a Churchman, a supporter of Church and State of the old-fashioned type. He attributed much of the lack of usefulness of some of the rising generation to the degeneracy brought about by cheap literature. One of the greatest pleasures of his life was a well-arranged reference library, which enabled him to become particularly apt in quotation, anecdote, or illustration. He possessed the pen of a ready writer, and his letters to the local press, if they could be collected and reprinted, would throw interesting sidelights upon local history during the past 30 years. Soon after going to Lancaster he married the eldest daughter of the late Mr. William Storey, J.P., of Fairfield House, who was mayor of Lancaster in 1872–73. Mrs. Wingate-Saul survives him with four sons and two daughters. Those who are interested in coincidences will find matter for reflection in the fact that Dr. Wingate-Saul's father, mother, and brother, like himself, died when they were 63 years of age.

HENRY PARR MALLAM, M.R.C.S. ENG., L.S.A.

By the death of Henry Parr Mallam, which occurred somewhat suddenly on Jan. 19th, one of the most familiar figures in Oxford passes away. He was born in 1838 and was rightly proud of the fact that he had earned his own living from the age of nine years when he was elected to a choristership at Magdalen College. Determining to enter the medical profession he became apprenticed to Dr. Freeborn when about 17 years old and then gained a scholarship at Charing Cross Hospital. Part of the money necessary for his livelihood he had to borrow, but by dint of hard work he was enabled to pay it off within a short time. In 1862 he became L.S.A. and was elected as house surgeon. In the following year he took the diploma of M.R.C.S. Eng. and started practice in Oxford in the same year as partner with Dr. Martin. Their practice lay mainly among the hunting farmers of the neighbourhood and in those days it was possible for a medical man to combine professional work with the active sports of hunting and rowing, both of which occupations appealed greatly to Mallam. Of more sedentary amusements Mallam was fond of whist and of music. With regard to the latter his early training stood him in good stead, while he possessed that much-to-be-envied treasure a real tenor voice. He was for many years a member of the Oxford Orpheus Society and a vice-president of the choral society. Besides his purely professional work he took his share in municipal affairs, serving for many years of his life as a member of the local board. For 42 years he was medical officer to the Oxford workhouse and to the Poor-law school and in these two difficult and important posts he was renowned for his kindness and tact, the former never degenerating into mere sentiment and the latter containing a large element of shrewdness. His relations with his board were always peculiarly happy. His advice was always ready and thoroughly sound, while he was at once courteous and firm as a professional adviser should be.

The position of a medical man in large practice in a University town is one of great distinction and of corresponding responsibility and there are few positions which give rise to such opportunities for making friendships and, moreover, for criticism or even worse. But Mallam so bore himself that his friendships were many and warm, while the reverse was practically unknown. He was a man of well-balanced judgment, keeping thoroughly abreast of all recent advances in medicine and choosing carefully and adopting what seemed of service. His skill in obstetrics was great and for many years he held the leading practice in this department in Oxford and its neighbourhood. He married a Miss Margetson and the great sorrow of his life was her sudden death after about 18 years of married life. He leaves four daughters and three sons, one of whom, Dr. Ernest Mallam, follows in his footsteps in Oxford.

Mallam belonged to the school of a bygone day; not that we mean that he was in any way fossilised but to those who knew him well and, indeed, to all who came into contact with him his personality was very loveable. Quiet, free from all self-seeking, most kind, with an old-fashioned courtesy full of charm, he took a place in Oxford medical life of much distinction and has left a gap which will be felt by everyone who has had the privilege of his friendship. He was one of those who had the rare gift of making his patients feel that he could aid them directly he came into the room. "I have ever thought," says Manchester Al Mondo, "the right way to dye well, was to live well," and if this can be said of any man it may well be said of Henry Parr Mallam.

WILLIAM AUGUSTUS WEST, L.R.C.P. IREL., L.R.C.S. IREL., L.M.

THE death of Mr. William Augustus West is announced at Sydney, New South Wales, at the early age of 47 years, from pneumonia, followed by pleurisy and heart affection. Mr. William West was the youngest son of the late George White West, barrister-at-law, of Ardenode, co. Kildare, and qualified for his profession in Dublin. He then left for Sydney where he became assistant to, and afterwards partner with, his elder brother, the late Dr. Arthur Annesley West, then practising at the Glebe, a suburb of Sydney When Dr. Arthur West died in 1885 Mr. William West continued the practice alone. He was well known and highly respected in the city as an able practitioner, and also esteemed for his kindly disposition, during the 22 years he spent in the district. His untimely death occurred on Dec. 11th, 1905, and he leaves a widow and two children to mourn their loss.

FRANCIS FOX, M.R.C.S. ENG., L.S.A.,

CONSULTING SURGEON TO THE SOUTH DEVON AND EAST CORNWALL HOSPITAL.

Mr. Francis Fox died at his residence, 9, Athenæum-terrace, Plymouth, on Jan. 18th, in his ninety-third year. The deceased, who received his professional training in Birmingham and at University College, London, took the diplomas of M.R.C.S. Eng. and L.S.A. in 1838 and 1837 respectively and shortly afterwards commenced practice in Plymouth. He was formerly surgeon to the Plymouth Public Dispensary and had been for many years on the honorary staff of the South Devon and East Cornwall Hospital, being honorary consulting surgeon to that institution at the time of his death. When the cholera outbreak occurred in Plymouth in 1849 Mr. Fox had charge of the cholera hospital and did noble work hand in hand with the late Rev. G. R. Prynne, vicar of St. Peter's. Mr. Fox was one of the oldest members of the Royal Western Yacht Club and took a great interest in yachting matters. In his younger days he was well known as a skilful operating surgeon and was one of the first surgeons in the West of England who performed ovariotomy with a successful result. Mr. Fox leaves a son and daughter. He will be missed in Plymouth where he was highly esteemed and respected, for there have been few inhabitants of the "three towns" better known in days gone by.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the examination held in January the following candidates passed in the subjects indicated:—

Surgery.—J. A. Kilpatrick (Section II.), King's College Hospital; and S. Zweiback (Section II.), Koenigsberg.
Forensic Medicine.—L. C. W. Brigstocke, Oxford and St. George's Hospital.
Midwifery.—J. P. E. Henery, St. George's Hospital; C. Mulholland, Belfast; and H. F. Wight, Guy's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—J. A. Kilpatrick and S. Zweiback.

UNIVERSITY OF CAMBRIDGE.—Mr. H. O. Jones has been appointed deputy for the Jacksonian professor, Sir James Dewar, for the present term.—The following degrees were conferred at the Congregation on Jan. 18th:—

M.D.—A. C. Hudson, Trinity.
Sc.D.—H. J. H. Fenton, Christ's.
M.C.—C. B. Goulden, Downing.
M.B.—N. C. Carver, King's; W. R. Honeybourne, Peterhouse; R. Puttock, Emmanuel; and W. P. Williams, Downing.
B.C.—F. Shingleton Smith, King's; A. D. Brunwin, H. T. Gray, and A. H. Miller, Trinity; F. F. Leighton, T. M. Neatby, and G. C. E. Simpson, St. John's; J. C. L. Roberts, Clare; C. Lillingston, Pembroke; C. H. W. Page, Corpus; G. W. de P. Nicholson, Jesus; G. L. Cox, Christ's; C. T. Scott, Sidney; and W. D. Keyworth, Selwyn Hostel.

LITERARY INTELLIGENCE.—Mr. William Heinemann will publish in the spring under the title of "A Handbook of Metabolism," an English translation of the second German edition of von Noorden's "Lehrbuch des Stoffwechsels," edited by Dr. Walker Hall.

Mr. J. Collingwood Thompson, L.R.C.P. & S. Edin., L.F.P.S. Glasg., who died on Jan. 13th at Bank Head, Fencehouses, Co. Durham, was only 33 years of age, and his early death from acute pneumonia will come as a surprise to many who only knew him in his usual robust health. Though he qualified by taking the triple qualification of Edinburgh and Glasgow he was originally a student at the Durham University College of Medicine. For a time he practised in North Northumberland but several years ago settled at Bank Head where he soon became very well known to the mining population of that district. Mr. Thompson's mother, who survives to mourn his death, was a niece of the famous admiral, Lord Collingwood.

BRITISH GYNÆCOLOGICAL SOCIETY.—The annual dinner of this Society was held on Jan. 17th, at the Monico, London, Dr. W. Alexander, the President, being in the chair. The toast of "The British Gynæcological Society" was proposed in felicitous terms by Dr. T. W. Eden. The President, in responding, gave some details of the progress and prosperity of the society. The foundation meeting was held on Dec. 27th, 1884, and its first president was Dr. A. Meadows. The society had existed for 21 years and its Fellows numbered nearly 500. He referred with pride to the journal of the society and his complimentary remarks concerning the work of the honorary secretaries, Dr. S. J. Aarons and Dr. S. Savage, elicited great applause. In connexion with the proposed amalgamation of medical societies the President mentioned that the British Gynæcological Society had given its adhesion to the proposed scheme. Dr. H. M. Macnaughton-Jones was intrusted with the toast of "The Services," which he proposed in an eloquent and impressive speech. Surgeon-General A. H. Keogh, C.B., Director-General of the Army Medical Service, in the course of his reply to this toast observed that the medical profession had a definite relation to war and explained how a campaign without a properly equipped medical department was bound to be a losing one and the sooner the medical profession awoke to the fact the better it would be for all concerned. The army authorities were responsible for an enormous number of women and children scattered throughout the Empire and it was part of the duty of the Army Medical Service to help these people. Medical officers were now trained specially for the work and anyone who visited the hospitals at Aldershot would give full credit for the excellent results obtained there. The enjoyment of the evening was enhanced by a well-arranged musical programme.

THE GENERAL ELECTION.—The following members of the medical profession have been returned to Parliament since our last issue: Mr. R. Ambrose, L.R.C.P., L.R.C.S. Edin., re-elected for West Mayo; Mr. R. J. Price, M.R.C.S., re-elected for East Norfolk; Dr. A. R. Rainy, M.B., C.M. Edin., elected for the Kilmarnock Burghs; Sir G. S. Robertson, K.C.S.I., M.R.C.S., L.S.A., I.M.S. (retired), elected for Bradford (Central), and Dr. V. H. Rutherford, M.B. Cantab., &c., elected for the Brentford Division of Middlesex. Amongst those who have lost their seats are Sir Michael Foster, K.C.B., M.B. Lond., and Dr. C. F. Hutchinson, M.D. Edin.

SOCIETY OF ARTS.—At an ordinary meeting of the Society of Arts held on Jan. 17th Dr. W. A. Aikin read a paper on the Scientific Aspects of Voice Development. He said that in the production of the voice three factors were involved—namely, the breath, the vocal reed, and the resonator. On the subject of the breath he said that the voice required a large and well-controlled volume of air in the chest and he discussed the relations of costal and diaphragmatic breathing at some length. The best effect was produced by what he called "central breathing," in which during inspiration the lower ribs were raised and fixed and the diaphragm was drawn down so that the upper part of the abdomen (but not its lower part) was caused to bulge forwards. The first part of the vocal expiration was accomplished by the diaphragm and the ribs afterwards began to descend. Contrary to the normal rhythm of respiration, the intake was usually rapid, and in singing the output was carefully distributed over a period which might be as long as 15 seconds. Dr. Aikin then described the mechanism by which the "vocal membranes" created sounds and said that their action was that of an acoustic reed. He next mentioned a variety of objections to the use of the manœuvre called "coup de glotte," or intentional closing of the sphincter, constituted mainly by the ventricular bands—two muscular folds immediately above the vocal membranes. He said that the variation of the pitch of the note depended upon the range throughout which the tension of the vocal membranes could be varied; this was entirely under the control of mental sound perception and in order to start a note without any uncertainty or hesitation it must be heard in the mind beforehand. The third factor in the production of the voice was the resonator or hollow spaces of the throat, mouth, and nose. The resonator could be sounded by itself, as in whispering—that is, without any reed note—but it was not possible to hear the reed note by itself since it could never avoid passing through the resonator. Thus it arose that every sounding note or vowel in language was associated with a particular position of the resonator. The power of using the vocal reed existed almost from the moment of birth but the management of the resonator was wholly acquired by education, just as with other voluntary muscular actions. The vocal reed was virtually the instinctive instrument of the emotions while the resonator was the cultivated instrument of the intellect. Different views on the subject of voice resonation have been held by different observers. Helmholtz and those who copied from him described the vowel A (ah) as being formed by a funnel-shaped chamber increasing with tolerable uniformity from the larynx to the lips. Dr. Aikin regarded this as an anatomical error and maintained that the resonator consisted of two chambers meeting at right angles by a somewhat constricted orifice in the throat, opposite which point there was a communication with a third chamber—namely, the nose. He demonstrated on himself the existence of the double or two-chambered resonator by percussing it at different times on his cheek and neck, eliciting in each case a series of ascending or descending tones according to the pitch of successive whispered sounds. He further showed that the two chambers could be made to act in unison and then demonstrated the nodal point at their junction by means of a tuning fork which sounded when held in the cavity of the mouth, was silent when advanced to the nodal point, and sounded again when advanced still further to the pharyngeal cavity. Of the two chambers the upper one was represented by the mouth; it was roughly hemispherical with a flat floor, a domed roof, an almost circular opening in front, and an oval opening at the back passing down into the chamber of the neck, which was composed of the pharynx and larynx. This second chamber was expanded by holding the head and back straight, by raising the ribs, and by

drawing the larynx down by the sterno-thyroid muscles. The expansion of this chamber was very important for the resonance of the voice but it was not essential to the actual formation of the vowels. In establishing the best possible resonant positions for the vowels the lower chamber must coöperate with the mouth. This lower chamber was in shape like a bag—narrow above where it entered the back of the mouth and wider below where it included the larynx, with the vocal membranes in the middle of its floor. The vowel sound Ah whispered with the mouth open and the teeth held an inch apart has a resonant pitch for men very close to C or C sharp in the treble stave and for women one about a third higher—namely, E flat or E. With children of both sexes the pitch is higher still and Dr. Aikin was therefore unable to accept the opinion of Helmholtz who believed that resonance was the same in men, women, and children. On Dr. Aikin's "resonator scale" all whispered vowel sounds are represented by a series of 12 notes, the lowest being that of "root" which is F in the first space of the treble stave and the highest being that of "leap" which goes up to C above the treble. He subsequently discussed the subject of the harmonic reinforcement of the voice and concluded by urging the necessity of making the study of phonology a part of the education not only of professional voice trainers but also of preachers and teachers in general. After the address he sat in front of a mirror and by means of a laryngoscope showed various movements and positions of his own larynx to several of the audience who stood behind him and looked into the mirror over his shoulder.

PRESENTATION TO A MEDICAL PRACTITIONER.—There was a large gathering at the White Hart Assembly Rooms, Tetbury, Gloucestershire, on Jan. 19th, when Sir Nigel Kingscote, on behalf of the subscribers, presented Mr. William Wickham, M.R.C.S. Eng., L.S.A., who is retiring from active work after 45 years' practice in Tetbury and the district, with an illuminated address containing the names of 173 subscribers, a silver inkstand (a copy of William III. style), and a cheque for 300 guineas as a mark of their high appreciation and respect.

MEDICAL MAGISTRATES.—Mr. Norman Henry Lawrence, L.R.C.P., L.R.C.S. Edin., has been placed on the commission of the peace for the district of Laingsburg, and Mr. Charles William Browne, M.R.C.S. Eng., L.S.A., on the commission of the peace for the district of Taungs, British Bechuanaland, South Africa.

INSANITY IN RUSSIA.—The *Pharmatzevtitcheski Viestnik* says that the recent troubles in Moscow have been accompanied by numerous cases of insanity and that the local Moscow hospitals are full of patients suffering from mental disturbance.

TIVERTON INFIRMARY.—Mr. J. Coles has given a house adjoining the Tiverton Infirmary to be used for a nursing institution. He has also given £500 to defray the cost of the necessary alterations.

UNIVERSITY OF OXFORD: DEGREE DAYS.—The following are the degree days appointed for the present term: Saturday, Jan. 27th; Thursday, Feb. 15th; and Thursday, March 15th.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ABERCROMBIE, PETER H., M.D. Glasg. & Lond., has been appointed Honorary Aural Surgeon to the Royal Caledonian Asylum, Bushey, Herts.

BALL, J. BRAMLEY, L.D.S. R.C.S. Eng., has been appointed Dental Surgeon to the Royal Hospital School, Greenwich, S.E.

COX, FRANKLIN, M.R.C.S., L.R.C.P. Lond., has been appointed District Medical Officer for the Clutton Union.

CUNNINGHAM, H. H. B., M.D. Brux., F.R.C.S. Irel., has been appointed Chief Clinical Assistant to the Royal London Ophthalmic Hospital and Senior Ophthalmic Clinical Assistant to St. Mary's Hospital.

DODSON, MARGARET B., M.D. Lond., has been appointed Pathologist to the West Riding Asylum, Wakefield.

FITZWILLIAMS, DUNCAN C. L., M.D., Ch.B., F.R.C.S. Edin., has been appointed Casualty Officer to the Hospital for Sick Children, Great Ormond-street.

GARRATT, G. C., M.D. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Singleton District of the county of Sussex.

GRANT, J. DUNDAS, M.D. Edin., F.R.C.S. Edin., has been appointed Honorary Aural Surgeon to the Royal Caledonian Asylum, Bushey, Herts.

HARRIS, HERBERT, M.D. Edin., has been appointed Honorary Medical Officer to the Rochdale Infirmary.

LAVAL, EVARISTE, M.B. Edin., has been appointed Assistant Medical Officer to the Warneford Mental Asylum, Oxford.

LYSTER, ROBERT ARTHUR, M.B., Ch.B. Lond., D.P.H., B.Sc. in Public Health, has been appointed Assistant County Medical Officer of Health to the West Riding County Council.

MILLER, JAMES WEBSTER, M.B., Ch.B. Aberd., has been appointed Assistant Medical Officer at the Dorset County Asylum.

MONTGOMERIE, HUGH MAYER, M.D., C.M. Edin., has been appointed Physician to the West Cornwall Infirmary, Penzance.

MONTGOMERY, JAMES BARCLAY, M.D. Glasg., F.R.C.P. Lond., M.R.C.S., has been appointed Honorary Physician to the West Cornwall Infirmary, Penzance.

MURRAY, WILLIAM, M.D., C.M. Edin., has been re-appointed Medical Officer of Health of the Warmly (Gloucestershire) Rural District Council for three years.

POLLOCK, W. B. INGLIS, M.D. Glasg., has been appointed Pathologist and Bacteriologist to the Glasgow Eye Infirmary.

SUTCLIFFE, AMELIA, M.B., Ch.B. Edin., has been appointed Clinical Assistant to the Southern Branch of the Leeds Public Dispensary.

SYMONS, JOHN, M.R.C.S., L.S.A., J.P., has been appointed Surgeon to the West Cornwall Infirmary, Penzance.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL.—House Surgeon. Salary £100.

BRADFORD POOR LAW HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, coal, and light.

CANCER HOSPITAL, Fulham-road, London, S.W.—Senior House Surgeon for six months. Salary £80 per annum, with board and residence.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, also House Surgeon, both unmarried. Salary in each case £80 a year, with board and lodging.

CHELTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of Branch Dispensary, unmarried. Salary £90 per annum, with board and lodging.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Physician.

HALIFAX, ROYAL INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £20, with board and residence. Also House Physician, unmarried, for six months. Salary £20, with board and residence.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Resident Surgeon. Salary at rate of £80 and £120 per annum, with board and residence.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—House Surgeon. Salary £80 per annum, with board and washing.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Physics. Salary £100 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon, for six months, renewable. Salary £80 per annum, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Honorary Dental Officer.

SIERRA LEONE, PRINCESS CHRISTIAN HOSPITAL, Freetown, West Africa.—Medical Officer. Salary £250 a year and rooms.

SUNDERLAND INFIRMARY.—House Physician and Third House Surgeon. Salary £80 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTH.

MORGAN.—On Jan. 19th, at Westcliff-on-Sea, the wife of W. Harmon Morgan, M.R.C.S., L.R.C.P. Lond., of a daughter.

DEATHS.

DE FABECK.—On Jan. 18th, at his residence in London, William Frederick de Fabeck, M.D., M.R.C.S. Eng., Surgeon-General (retired), I.M.S.

MALLAM.—On Jan. 19th, at High-street, Oxford, suddenly, after a short illness, Henry Parr Mallam, M.R.C.S.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

KISSING THE BOOK.

WE have upon many previous occasions referred to the unnecessary, unclean, and disgusting fashion of taking an oath provided by the English legislature, and have compared it with the cleanly form of oath "usually administered in Scotland." Relief upon this point was given to witnesses and others who have to take oaths by the Oaths Act of 1888. This Act, however, is unknown to most ordinary citizens and although probably known to commissioners for oaths and county court judges is often not acted upon as it should be. It is by no means uncommon to see in reports of trials the presiding official, be he judge or magistrate, make disparaging remarks to witnesses who desire to be sworn in the Scottish fashion. This being so we are glad to see that in a case which came before Sir Forrest Fulton, the Recorder, in the Lord Mayor's Court on Jan. 22nd, a witness objected to kiss the book and desired to be sworn in the Scottish fashion. Sir Forrest Fulton is reported as saying that he wished such requests were made more frequently. Addressing Mr. Wallace, K.C., M.P., who was engaged in the case, the Recorder expressed a hope that he, Mr. Wallace, would endeavour to get Parliament to make the Scottish form of oath universal. We quite agree with the Recorder, but in the meantime we may remind our readers that any one of them has a *right* to be sworn in the Scottish fashion if he so desires it and that no official has any business to make any difficulty about the matter. If, says the Oath Act, 1888, any person desires to be sworn after the manner in which an oath is usually administered in Scotland, "he shall be permitted to do so and the oath shall be administered to him in such form and manner without further question." From a paragraph which appears in the letter from our Liverpool correspondent in another column it would seem that both the medical officer of health and the officials of the Birkenhead police court are unaware of the provisions of the Oaths Act.

A WARNING TO MEDICAL MEN.

THERE is an alcoholic individual who, when last heard of, was impersonating a medical man in singularly ingenious and mischievous circumstances. He recently applied, while apparently the worse for drink, at a provincial hospital, where he gave the name of the resident medical officer at another provincial hospital, and asked for assistance and a bed. The sister-in-charge of the hospital accordingly gave him the address of one of the members of the medical staff, as she could not herself take the responsibility of admitting him. On him the imposter called and again said that he was Dr. ——, the resident medical officer of —— hospital, adding that he had "been on the loose" and had had an attack of hæmatemesis in the train and felt very ill. The medical man, noting his obviously sad plight, paid for his rooms in a neighbouring hotel, when the next morning he disappeared. It is possible that other medical men may be similarly victimised by this ingenious person who, although he is obviously a fit subject for medical care, is not a medical man and ought to be punished for assuming the name and address of a medical man in this singularly offensive manner.

SUPERCILIARY GYMNASTICS.

To the Editors of THE LANCET.

SIRS,—I have read "Harlequin's" letter in THE LANCET of Jan. 20th p. 198. I possess the powers he writes of and am able to lift and to depress the eyebrows alternately and simultaneously. I have also some power over the external muscles of the ears and can move both ears pretty freely simultaneously. These powers are, I believe, rather uncommon but the possessor of the latter accomplishment is perhaps not to be altogether congratulated upon it, as it is by some regarded as an asinine attribute. I prefer to regard it as an indication of an advanced stage in the evolutionary process.

I am, Sirs, yours faithfully,

Jan. 20th, 1906. "DARWIN."

To the Editors of THE LANCET.

SIRS,—With reference to "Harlequin's" letter in THE LANCET of Jan. 20th, p. 198, both my sister and I have amused ourselves for some years by depressing one eyebrow by elevating the other. Curiously enough, we elevate the left and depress the right but not *vice versâ*, although I believe with sufficient practice this might be attained. There is, however, to my thinking, no great advantage to be derived from this accomplishment.—I am, Sirs, yours faithfully,

A. B.,

Jan. 20th, 1906. Teacher of Swedish Gymnastics.

To the Editors of THE LANCET.

SIRS,—I was able to perform the feat of raising one eyebrow while depressing the other at my first attempt after seeing "Harlequin's" letter. I do not know that it is a power possessed by every individual, but perhaps with some practice most people would be able to acquire it, as also, I believe, one can (with practice) make use of the muscles of the ears to make them move by fixing the occipito-frontalis muscle.

I am, Sirs, yours faithfully,

Jan. 23rd, 1906. CLASSIC.

To the Editors of THE LANCET.

SIRS,—It may interest "Harlequin" to know that I have been able to perform the feat he mentions for some time, since I was a boy at school. I have a brother who can raise one eyebrow and depress the other but only on one side and not alternately. It is not a very hard matter to accomplish the feat with a little practice if one commences young enough. I think that it is on a par with the voluntary movement of other muscles which are not often used voluntarily, such as the small extrinsic muscles of the ear and the occipito-frontalis. With many of the lower animals the use of these muscles is an every-day occurrence and doubtless it was so with our primeval ancestors. I inclose my card if "Harlequin" cares to make further inquiries.

I am, Sirs, yours faithfully,

Jan. 23rd, 1906. H. R. B.

THE NEW MIDWIFE.

WITH the advent of the new midwife as moulded by the Midwives Act has come the natural desire on the part of "local supervising authorities" that the midwives under them should be instructed as to their duties. We recently published a note upon a code of such instructions in use in Manchester and now the Salop local supervising authority has followed suit and has issued instructions to its midwives. These instructions, which are based more or less upon the Manchester code, are signed by Dr. J. Wheatley, the county medical officer of health. They are sound and clearly expressed but in one place we think that an alteration is required. On p. 4, which contains the instructions dealing with the management of labour, the midwife is instructed to boil her nail-brush for three minutes. We are not aware of the fiscal condition of the nail-brush trade, but if it be one of our disappearing industries the regulation in question should give it a fillip, for we are sure that hardly any nail-brush could stand boiling for a period of three minutes more than twice or thrice. As the brush is not used for the patient but for scrubbing the nurse's hands, which are already surgically unclean, and as hot soap-and-water are to a fairly high extent bactericidal we think that it would be quite enough to soak the nail-brush in some disinfectant before using it. Unless the local supervising authority is prepared to supply nail-brushes we fancy that the local midwife will not comply with the regulation in question.

CONCERNING TUCKER: A WARNING.

A PERSON named Tucker, who was sentenced to four months' imprisonment, at the end of 1904, for attempted fraud in connexion with the sale of a medical practice to Mr. D. L. Lindsay of Liverpool, has sent us an advertisement for insertion in THE LANCET, which runs as follows:—

> "Wanted, a gentleman to manage a country practice, value £300, with appointments worth £80. No premium being asked for practice, he must be able to purchase the latter."

The replies were to be sent to THE LANCET office. We are inserting the suggested advertisement in a more prominent part of the journal than that usually accorded to such announcements as a warning to those in search of a practice to steer clear of Tucker. He addresses his letter from "Napton, Rugby," and signs himself "W. E. Tucker," but he is known to us as D. Tucker. He is not a medical man and previously to the four months' imprisonment alluded to was fined £10 and £3 costs for forging death certificates in the name of Dr. Henry Gould. It may be mentioned that the name of Mr. W. E. Tucker occurs in the Medical Register, where he is stated to be resident in Bermuda—no doubt, in D. Tucker's opinion, a fairly safe distance from Rugby and one enabling a personation scheme to be safely tried. It would be interesting to us to learn whether a Mr. "W. E." Tucker, who in a letter which has been forwarded to this office by the recipient, addressed from 101, Everton-road, Liverpool, dated Sept. 21st, 1904, signed himself "D." Tucker, is the holder of the appointments therein mentioned, worth £80! Further information concerning Tucker may be found in THE LANCET of Oct. 1st, 1904, p. 964, and of Dec. 24th, 1904, p. 1811. It seems to us that the police and the General Medical Council might both have something to say to Tucker. Any help we can give is theirs.

THE PATENT "S.Y.P." TEAPOT.

NOTHING could be simpler than the management of this teapot for the preparation of an infusion of tea containing a minimum of astringent principles. We have on a previous occasion described its main features but recently some further improvements have been made. Formerly the infuser consisted of a loose perforated metal container, whereas in the new design the infuser is part and parcel of the pot itself, the whole being made of Wedgwood cream-coloured ware. When the teapot is in its normal position the infuser is situated immediately under the dome of the pot, so that the leaves may be separated from the infusion. In making the tea infusion the leaves are placed in the infuser and the pot is tilted in such a position that the spout points upwards and the handle is below. Hot water is then poured on the leaves and when it is considered that they have been sufficiently infused the

pot is returned to its normal position. The infusion is thus separated from the leaves, the latter being held up in the infuser at the top of the teapot. This arrangement not only prevents a prolonged stewing of the tea but it provides also for the retention of the bouquet and fragrant qualities of the tea, for although the leaves are withdrawn from the water they are left inside the closed teapot. The "S.Y.P." teapot may be obtained from the Inventors' and Investors' Corporation, Limited, of 35, Bucklersbury, Bank, E.C.

MARRIED COUPLES "WITHOUT INCUMBRANCES."

His honour Judge Emden recently had a witness before him in a case at the Lambeth county-court who spoke of a man and his wife as being "without incumbrances," upon which the judge said: "I presume you mean children when you speak of incumbrances," and added when the witness assented: "Say children, then. To refer to children as incumbrances either in speaking or in advertisements for persons wanted to fill situations is only helping the present decline in the birth-rate." He might have added that the too general practice to which he thus alluded of excluding married people with families from the opportunity of earning their livelihood encourages the pernicious traffic in pretended abortifacients as well as the actual perpetration of the crimes of procuring abortion and child-murder.

THE SPARKLET SELTZOGENE.

THOSE who have had occasion to use the old form of seltzogene with its effervescing powders will easily recognise the advantages offered by the new sparklet seltzogene or sparklogene. To begin with, the effervescing powders are dispensed with altogether in the sparklogene, and when we recall the trouble involved in placing powders in the upper container, in keeping particles of them out of the aerated liquid, in removing the liquid products of interaction when the seltzogene required to be re-charged, and in preventing the powders evolving gas before the seltzogene could be closed, it must be owned that a very decided advance has been made by the substitution of a sparklet for the purpose of aeration. Moreover, the time occupied in the preparation of an aerated water in the sparklogene is very much shortened, and, in fact, three pints of aerated water may be made ready for consumption in less than five minutes, although, of course, the aeration is very much improved by longer contact of the water with the gas. Three large-sized sparklets are sufficient for the aeration of three pints of water. When the gas is completely discharged from the first sparklet it is taken out after shaking the water and gas together for a few minutes, and replaced by another one, and so on until the contents of three sparklets are discharged. By means of a valve close to the "piercer" the water under pressure is prevented from escaping. When the aeration is completed the sparklet and sparklet-holder are removed and a metal cap put in their place. There is thus no contact of the aerated water with the metal of the sparklet, which at one time gave rise to some of the iron dissolving in the water and communicating to it an inky taste and a turbid appearance. The sparklogene is very convenient for the preparation of aerated mineral waters for medicinal use, such as soda, potash, or lithia water, tablets of the carbonates of these bases being supplied for the purpose. We found the apparatus to work most satisfactorily and the claims made in favour of its advantages are by no means exaggerated. The makers are Aerators, Limited, Upper Edmonton, London, N.

"MORTON'S NEURALGIA."

A CORRESPONDENT writes to us for information as to the treatment of a case of "Morton's neuralgia." This title, otherwise metatarsalgia, is the name given to a painful affection of the foot in which one or more of the digital nerves are pressed upon by the heads of the metatarsal bones. To deal successfully with this condition it is necessary to recognise that the pressure of the metatarsal bones is increased by anything which tends to narrow the anterior part of the foot or to flatten the plantar arch. Therefore boots which are too narrow at the heads of the metatarsal bones should be avoided. In some cases firm bandaging or strapping of the foot at the level of the bases of the metatarsal bones will afford great relief, for this constriction of the bases of the metatarsal bones will tend to separate their heads. In other cases the use of a suitable "valgus pad" will remove the pain entirely. Care is sometimes required in adopting the valgus pad to the exact needs of the individual foot but the relief generally obtained is well worth a little trouble. It must not be forgotten that the name of Morton's disease is sometimes applied loosely to any painful affection of the foot.

COMPRESSED SANITARY TOWELS.

Messrs. Burroughs, Wellcome, and Co. have issued some very convenient compressed sanitary towels for ladies. They are put up in sealed packages and take up but a very small space owing to the great compression to which they have been subjected. They expand thoroughly and well and should prove of benefit to travellers as a large number of them can be carried in a comparatively small space.

M. A. R.—1. We do not think the second call is necessary. 2. We think that further overtures should come from the older residents. There are no hard-and-fast lines about these matters and our correspondent will probably find that as time goes on through the acquaintances whom he has made he will meet his other colleagues.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

WEDNESDAY (31st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (2nd).—London (2 P.M.), St. Batholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (31st).—SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M. Paper:—Mr. T. Adams: The Garden City and the Chesp Cottage.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—5 P.M. Papers:—Dr. A. Morison: The Present Position of the Treatment of Cardiac Disease by Baths and Exercises.—(If time permits) Dr. Braithwaite (Buxton): Cases treated at the Devonshire Hospital by the Buxton Waters.

THURSDAY (1st).—NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos street, Cavendish-square, W.).—8.15 P.M. Annual General Meeting. Election of Officers. 8.30 P.M. Paper:—Mr. W. Bateson: Mendelian Heredity and its Application to Man.

NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital, N.).—4 P.M. Dr. A. J. Whiting and Dr. G. Basil Price: Clinical and Pathological Demonstration (illustrated by lantern slides).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. G. Pernet: Clinique. (Skin). 5.15 P.M. Lecture:—Dr. L. Williams: The Therapeutics of Some Common Ailments.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: Functional Nervous Diseases of Children, with Cases.

TUESDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. B. Abrahams: Clinique. (Medical.) 5.15 P.M. Lecture:—Dr. G. S. Middleton (Glasgow): Remarks on the Diagnosis of Pleural Effusion and of Empyema.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Cataract in its various Forms.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Batten: Cerebellar Disease.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Colney Hatch Asylum, New Southgate, N.).—3.30 P.M. Dr. H. Corner: Demonstration on States of Mental Weakness.

WEDNESDAY (31st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. L. Daniel: Clinique. (Surgical.) 5.15 P.M. Lecture: Dr. P. Stewart: Disorders of Articulation.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).—4 P.M. Clinical Lecture:—Dr. J. R. Bradford: Malignant Endocarditis

THURSDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Lecture:—Mr. A. H. Tubby: Surgical Diseases of Children.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Galloway: Demonstration of Medical Cases. (Post-Graduate Course.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Mr. Malcolm: On Fibroids.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: Syphilis: I., History and Primary Invasion (Constitutional and Local). (Chesterfield Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Mr. J. Berry: The Surgery of Pulmonary Cavities. (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Dr. F. J. Poynton: Some Hepatic Affections in Children.

FRIDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. A. Lawson: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. J. Reece: Food and Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Batten: Myasthenia Gravis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Clinical Lecture:—Dr. G. N. Meachen: Acne and its Treatment.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M. Prof. S. P. Thompson: The Electric Production of Nitrates from the Atmosphere.

SATURDAY (3rd).—ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—3 P.M. Mr. J. W. Gordon: Advances in Microscopy. (Lecture I.)

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THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, were given in THE LANCET of Jan. 6th, 1906.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 25th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
Jan. 19	29·98	NNW	...	67	44	39	38	41	Cloudy
,, 20	30·55	W.	...	56	51	33	32	34	Foggy
,, 21	30·06	W.	0·09	53	45	34	40	42	Cloudy
,, 22	30·43	N.E.	0·02	54	41	37	35	37	Cloudy
,, 23	30·63	S.W.	...	39	39	33	34	35	Foggy
,, 24	30·53	S.W.	...	46	46	34	35	36	Overcast
,, 25	29·76	S.W.	0·32	50	49	36	46	46	Raining

During the week marked copies of the following newspapers have been received:—*Siam Observer, Sierra Leone Weekly News, Express and Echo (Devon), Army and Navy Gazette, Islington Gazette, Hampstead Express, Globe, Belfast Whig, Birmingham Weekly Post, Sun, Sheffield Telegraph, Glasgow Citizen, Yorkshire Observer, Leicester Advertiser, Portsmouth Independent, Newcastle Chronicle, York Herald, Notts Express, Bury Times, Middlesex County Times, Manchester Guardian, &c.*

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